

University News

WEEKLY JOURNAL OF HIGHER EDUCATION

MONDAY, JULY 10, 1995

Rs. 7.00

MUSTUFA KHAN

Reading the Contemporary

I. RAMABRAHMAM

Accountability of Teaching Profession — The Role of Academic Staff Colleges

A.N.P. UMMERKUTTY

University and Social Transformation in India

M.S. RANA

Axe Falls on Low-Priced Books

MADHAVRAO SCINDIA

Investment in Science & Technology — Convocation Address

GRANTS FORMULAE FOR VARSITIES

CAMBRIDGE NEHRU SCHOLARSHIPS

STRATEGY FOR TECHNOLOGY TRANSFER

OPEN LEARNING IN ENTREPRENEURSHIP



Association of Indian Universities

Prof Ram Reddy Passes Away

Prof. G Ram Reddy, the architect of distance education in India, died of a heart attack on 2 July 1995 in London where he had gone to receive an award of excellence in distance education, instituted by the International Council of Distance Education and Commonwealth of Learning.

A product of Osmania University, he rose to be its Vice Chancellor during 1977-82.

He headed the Committee appointed by the Government of Andhra Pradesh to look into the feasibility of establishing an Open University in the State in 1982. *Open Learning System*, the report of this committee, became the basis for the establishment of the Open University in Andhra Pradesh. Prof. Ram Reddy was named the first Vice-Chancellor when the University was set up in 1982.

In March 1985 he was called upon to be the Convenor of the Committee appointed by the Govt. of India to prepare a project report on the establishment of the Indira Gandhi National Open University. History repeated itself when the project report became the basis for the establishment of the National Open University and Prof. Ram Reddy was appointed the first Vice-Chancellor. During his stewardship the IGNOU struck roots and in less than three years of its operation, it had produced 150 courses and over 400 audio and video programmes. It had established 140 study centres and 13 regional centres and had an enrolment of 54,000 students. It had set up 7 diploma and certificate courses in advanced and specialised areas and had registered an all India presence.

By his pioneering work in the field of distance education and having established first the Andhra Pradesh Open University (now named Dr B R Ambedkar Open University) at Hyderabad and then the Indira Gandhi National Open University (IGNOU) at Delhi, Prof Ram Reddy had deservedly earned a reputation as an institution builder.

In 1989 Prof Ram Reddy took over as Vice President of the Commonwealth of Learning, Vancouver (Canada). Prof Ram Reddy, it will



Prof. G. Ram Reddy

be recalled, was a member of the Commonwealth Committee whose report led to the establishment of the Commonwealth of Learning. He was also a representative of the Government of India on its Board of Governors.

In 1991 Prof. Ram Reddy returned to India to assume the Chairmanship of the University Grants Commission. Establishment of the National Assessment and Accreditation Council (NAAC), which promises to change the entire complexion of Indian higher education in the years to come, was the crowning glory of his eventful

stewardship of the UGC which drew to a close in November 1994. Presently he was the Chairman of the Indian Council of Social Science Research (ICSSR).

He had been associated with several national and international bodies and served on a number of committees like the Committee for the establishment of a women's university in Andhra Pradesh; High level committee to review the existing administrative arrangement for Rural Development and Poverty Alleviation Programme (Govt. of India); Advisory Committee on the Study of Alternate Models for the Management of Universities; Review Committee of the University Grants Commission; Review Committee of the Indian Council of Social Science Research; UGC Committee on New Universities, Executive Council, Association of Commonwealth Universities etc.

An erudite scholar, Prof Ram Reddy wielded a facile pen and shared his ideas and vision with his numerous readers. His publications include *Panchayati Raj and Rural Development*; *The Patterns of Panchayati Raj in India* (Ed); *Public Policy and Rural Poor in India: A study of Small Farmers Development Agency in Andhra Pradesh* (with G Hargopal); *Open Universities: Ivory Towers Thrown Open*; and *Higher Education in India: Conformity, Crisis and Innovation*.

He was closely associated with the Association of Indian Universities since 70s and was elected its President for the year 1987. It will indeed be difficult to fill the void caused by his death and Indian higher education is poorer with his departure.

UNIVERSITY NEWS

VOL. XXXIII JULY 10
No. 28 1995
Price Rs. 7.00

A Weekly Journal of Higher
Education published by the
Association of Indian Universities

IN THIS ISSUE

Reading the Contemporary	1
Accountability of Teaching Profession	3
University and Social Transformation in India	6
Axe Falls on Low-Priced Books	12
Convocation	
Pondicherry University, Pondicherry	14
Campus News	
Grants Formulae for Varsities	17
Open Learning in Entrepreneurship	17
Agriculture	
Strategy for Technology Transfer	20
News from UGC	
Countrywide Classroom Programme	22
News from Abroad	
Asia-Pacific Human Rights Information Centre	23
Book Review	24
Research in Progress	27
Theses of the Month	28
Education News Index	31
Classified Advertisements	35

Opinions expressed in the articles
are those of the contributors and
do not necessarily reflect the poli-
cies of the Association.

Editor :
SUTINDER SINGH

Reading the Contemporary

Mustafa Khan*

Why should we bother to read foreign literature when our own indig-
enous ones are so rich in content and expression is not so easy to answer.
Chauvinistic or global consideration apart, foreign literature is, like our
own literature in any of the sundry languages, a criticism of life. When
there is so much of foreign, mostly western, influence on us, it is incumbent
upon us to get to know what do people in the west think about those things
we appreciate so much in them and prize them to such an extent as to
imbibe them. A universal feature of life today is the craze to get slim. What
with the popularity of media or the personality cult, slim is beautiful is
going to stay here for quite sometime now. This is a foreign idea in the land
of the revered holy men who in their multitude bandy their enormous
paunches like some of the revered deities whose corpulence inspires awe
and contentment in us. Inadvertently but surely the secular has super-
seded the holy in life. In our land where religious strife has acquired for us
a popularity of sorts no religion has shown inclination to battle against this
surreptitious encroachment upon us. Can literature be expected to do this
for us?

There is a story of Frederick Busch called "A Three-Legged Race" (*The
Children in the Woods*, New York : Ticknor and Woods, 1994). A Jewish
woman takes her daughter to an eye doctor for the trouble that the girl
Claire has with one of her eyes. The mother does not have any money to
pay the doctor. However, her love and duty compel her to get the eye of her
daughter treated and pay the bill a few days afterward. Claire grows into a
woman and marries a man called Mac. She studies hard and takes her
Ph.D. Her not getting a job of a teacher in a college does not deter her. She
works as an editor. She dubs the disease of modern times as weakness. One
such weakness is the female succumbing to the universal male wish for the
slim and pretty by standardizing herself by streamlining to become the
appetising receptacle of functional pleasure. Claire becomes a victim of
this so that Mac returning from army duty would love her. The woman in
her feels disgusted with this obnoxious tendency to gratuitously offer
herself as a helpless victim. And she a working woman.

Claire's father marries another woman when her mother leaves him.
She feels orphaned even when her mother is still alive and her father has
only taken another woman. After some years pass her father sues all his
sons and daughters for support. As a consequence Mac stops sending
money to him while his own father dies lonely in similar circumstances.

Claire's son Harry grows up. She arranges a birthday party for him.
She ties his leg with the legs of a boy and a girl her son likes. Harry shows
his nervous discomfort despite Claire's intelligent efforts to smooth out the
matrimonial crudity of his behaviour. How hard is her lot in life that she is
herself running a three legged race of her own.

Primarily, there are two aspects of life worth noting. One is the per-
chant for shedding weight to create more hunger in men for women. If

*Nayee Colony, Ambedkar Chowk, Manmad-423 104.

this makes the girls and women promiscuous, the mother gets the blame. Those who thin themselves are like the Aushwitz victims towards the end of their earthly days before their extermination in the gas chambers. Anorexia nervosa is line breeding of girls and women for playing physical role in bed chambers. What else is the use of the standardized size of the pelvis and the bust for? If men and women do not have any other moorings in each other, then slimness is the demeaning of human relationship.

This is what constitutes the criticism of life. In the 8000 colleges and 200 universities in our country if we attempt to learn such a criticism of life in the books of English we prescribe we would do far better than mechanically, albeit facilely, preparing students for set questions in examination. Accreditation and assessment of teachers of literature and the institutes teaching literature should make a foray into the world of values. What, after all, do we get from the study of literature in addition to proficiency in language?

The other aspect of life is what Claire calls weakness. It is a general decline and debility of character. A woman is refused a teaching job on account of her racial origin, she is denied a mutual share in her husband's life, she is constrained to deny to her body enough wholesome food so that her body is more presentable for her husband's gratification, she is made to undergo humiliating tasks to induct her son into life, she is forced to cover the intellectual ferment of her leftist inclination, and is torn by the excruciating breaking up of her parental family and the sordid demands of necessitous circumstances of aging parents, her own and those of her husband's. If this is life, what worth is life?

Reading and teaching literature in colleges and universities around the country is a momentous task when it involves the recognition of the criticism of life. Assessing examination scripts or evaluating the teaching of a teacher should elicit the criticism of life. There are great thoughts that have changed the whole life of individuals. Literature is a great thought well written in selectively designed words. Where and when we apply it to our own life for consolation in despair or counsel in crisis depends on how well we have internalized the values of life depicted in words. A measure of success of university and college teaching is how much in few years we have internalized through words what their writers took so much pains and time to pen over the centuries.

Accreditation and assessment must be more than mere certification of meritorious performance of institutions, persons and projects. These newly introduced processes in our academic world must also evince the mutual recognition of the criticism of life that literature is. How much the teacher and the taught have both gained from this criticism of life? Teaching and learning is interfacial in literature class. What we learn or teach is tangent with what life we live. The trauma of Tess or Claire should not be left to the agenda of any movement. It is the right concern of everyone, more precisely of the educated. In order to forestall any international forum indicting us for breaking the human rights of women we must start a dialogue within the written words for a more meaningful understanding of ourselves. Questionnaire to ascertain knowledge of this in teacher and student will not be far behind in time.

The multiplicity of meaning of a literary text and its relevance to us reflects how potential the interfacial nature of teaching literature is. Despite differences of background of culture and religion, we have the most important thing in common. We are all human. Therefore it is all the more imperative for us to know what we are. Our weaknesses first. If we know them we can learn how to remove them. In "A Three-Legged Race" there is a concern for human weakness. Claire thinks that there is weakness in the fear of losing a limb or not having enough to marry the likes of Alvin whose mother would like only a girl with money easily married and jailed at the back of the private house she brought in the dowry. Alvin's mother calculates that her son would need ten thousand dollars for an office and a car and a nurse while Claire has been dreaming of Alvin practising medicine on an island in the pacific and she would be writing a book on it. Umpteen students will have to soon consider the two streams of thought, material and ideal, which Claire and Alvin's mother have been subjected to in the book. The book leads thus far but no further. Our educational institutes do the same. But if students begin to know how they are led, what leads them and where, they would one day find out their own way in life. Literature bears on life for it is a criticism of life.

The foregoing cheerfulness is not quite reflected in the ground reality of the campuses. The whole educational set up has grown so enormously that restructuring of any one part is almost unenviable, notwithstanding its being the crying need of the time. Teachers often

(Contd. on page 5)

Accountability of Teaching Profession

The Role of Academic Staff Colleges

I. Ramabrahmam*

Every time there is a pay commission, it invariably tries to tag the enhanced salary to certain conditions. This is done with an intention to ensure better qualitative changes in the educational scenario. The minute details of implementing the enhanced scales of pay are worked out carefully, checked and rechecked both by the authorities and the recipient teachers both taking utmost care in every possible detail. However, neither of these two lay an equal importance on the other side of it — the demand for quality assurance. Importance, if any, is narrowed in the apprehensive examination of the conditions laid by the committee, to be criticised and objected to by the associations.

It is true that teaching is considered a noble profession and is unique in self accountability. But a combination of over romanticisation of the profession and self accountability as a sole measure of evaluation may sometime give rise to delusions of grandeur among teaching community.

Increasing resistance to all attempts at evaluation of the teachers is noticed especially in the past two decades. The democratic and the most practical way of teachers' evaluation by students (in the anonymous secret feedback box), and the practice of the Principal/Head of the department attending and assessing the class of a junior colleague has almost become extinct yielding to the resistance from teachers' associations. The only assessment that prevails at present is the ritual called the Confidential Report — CR as is popularly known. Even this, acquired sufficient taboo as it either remained just a formality or is condemned to be used as a "stick" by the management. Thus, taking a full turn we realise that the teaching profession is left without any meaningful evaluation.

In countries like Poland radical trials like allowing the choice of lecturers to students are being experimented as a measure of quick quality enhancement. (*University News* 12 April 1993). Though it is too early for India to chew such ideas, serious thinking has to

go into finding the means of filling the great void in accountability. But the very concept of accountability in the profession has, in phases, completely evaporated into the thin air not leaving behind even a faint fragrance. Given such conditions, it is rather difficult to decide the pivotal point of its revival. Nevertheless, reviving it is more or less the only saving device to protect the quality of higher education from further slide which may be devastating.

One immediate source to initiate and motivate the accountability campaign for teachers is Academic Staff Colleges (ASCs). There are 45 ASCs actively functioning in the country. The UGC is spending about Rs. 25-30 lakhs (approx.) per annum on each college. Though these colleges are doing a good job in conducting Orientation and Refresher Courses, assigning them the responsibility of inculcating professional accountability in teachers may provide a definite direction to the professional development programmes organised by them. Because, unlike many other professions where success rests on performance evaluation through formal assessments in terms of direct results and also informal assessment through social audit, in teaching career advancement has ceased to be direct consequence of the individual's performance. Unless this is restored through accountability, teachers will not feel a sense of professionalism. The ASCs being centres of professional development must accept the challenge of developing the sense of professionalism among teachers, and initiate necessary steps towards it.

Following are few suggestions for ASCs to optimise professional development through Orientation and Refresher Courses:

1. It should be made mandatory for every college teacher to attend one Orientation/Refresher course every two years. Though this may not seem new, the shift in responsibility suggested below would make a difference to the whole philosophy of staff development/training.
 - (a) The responsibility of deputing teachers for the course must rest on the management/state government.

*Reader, Academic Staff College, University of Hyderabad, Hyderabad-500 046.

- (b) The TA & DA for these courses should continue to be paid by the UGC.
- (c) For every individual the ASC must charge a token fee of Rs. 400/- to 500/-. This may be borne by the management or the individual. This income may be utilised in bringing out a newsletter/journal, the details of which will be discussed under 4(a).
2. The ASCs must conduct 4 weeks' complete residential courses with good lodging facilities to enable rigorous training in pedagogical skills, personality development, and motivate the teachers sufficiently for intellectual/professional pursuits.
3. Every course must be backed by a long term meticulous planning, to make it meaningful and challenging.
- (a) The ASCs must prepare and despatch the course contents, course material and specific expectations from teachers clearly spelt out well in advance to the prospective participants.
- (b) Every teacher trainee should be insisted on prior homework that calls for deep thinking, planning and preferably experimented by himself/herself in the classroom. This could relate either to the method of teaching, administrative capability or an interesting innovation in one's own subject.
- (c) The above experience may be shared with others in the course through presentation in a seminar, or post-lunch/post-dinner discussions depending upon the nature of the work.
- (d) The course must be very tightly scheduled so as to keep the teachers completely immersed in it. Only then can we expect any attitudinal change towards better in the short duration of 4 weeks.
- (e) The course must emphasise on research methodology/laboratory experiment in order to motivate, orient and provide the teacher a strong footing in research activities. For this the course must not only conduct classes in methodology but also ask every teacher to conduct one new laboratory experiment or a field study and submit the project report as a partial fulfilment of the course.
4. The responsibility of ASCs must not end with training. They must also assume the charge of dissemination of information as well following training.
- (a) The ASCs must necessarily have a publication wing. Newsletters/journal must be brought out regularly utilising the income generated by the participant fee (described under 1 above). The best project reports and classroom innovations of the teacher trainees must find place in it, apart from the innovations, if any, of the ASC itself in organising the courses.
- (b) The UGC must encourage — rather insist on follow-up studies on the teachers who attended the Orientation/Refresher courses. These follow-ups must necessarily involve the management, teacher participants and also the students so as to get a reliable picture of the effect of training in classroom teaching. This will not only measures the impact of training in quality of teaching, but also enable the ASCs to continuously modify/improve their programmes in the light of the feedback received from the ex-trainees.
5. The ASCs must organise preferably two short courses in a year for the management/principals. These principals must preferably be from those colleges from where large number of teachers seek admission into the courses of that ASC. The purpose of these short courses must be to provide training in effective administration of academic institutions with the sole emphasis on ensuring accountability. No doubt that principal's conferences are already being conducted by the ASCs as a practice but the only change and a significant one too is the stress on the meaningful direction to it through specific training.
6. The management of colleges which sponsor their teachers for the course must insist that every teacher, on return from the ASC's course must present a seminar on the details of the course for the benefit of rest of the faculty.
7. Every ASC in turn must be accountable to the UGC for the productivity, creativity and uniqueness of its training input into the programmes. This can be assessed by
- (a) the results of the following up, which may be continuously monitored either by the regional centres of UGC or NIEPA, or assigned to any third party private agency as a project work; and
- (b) the quality of project reports and classroom innovations experimented and contributed by the teachers in the newsletter/journal published by ASCs.
- Thus, the final goal of the training programmes

conducted by the ASCs must be to 'professionalise' teaching by promoting

- (a) meaningful innovations in the classroom,
- (b) research interest among teachers,
- (c) optimised participation of teachers in matters related to academics,
- (d) uninhibited expression by teachers in matters related to administrative reforms of educational institutions, and
- (e) commitment, challenge and control among teachers that reinforce accountability and are reinforced by autonomy.

The seven steps suggested here are only broad outlines — to stimulate thinking in all those committed to reviving the quality in higher education. This pace and line of functioning calls for mobilising more resources both in terms of finance and manpower. But certainly in view of the cost-effectiveness an attempt on this line may be worth making.

The National Commission on Teachers' Pay Scales set up by the UGC and headed by Prof. Rastogi must be working on the accountability aspects of teaching profession. It is gathered that the Rastogi Committee is already initiating moves to ascertain the National and

State level teachers associations' point of view on not only pay scales but also service conditions. People in general and others interested in quality of higher education would appreciate if teachers associations themselves evolve suitable accountability package and present it before the Rastogi Committee for its incorporation in the final report.

It is high time the esteemed Directors and faculty of ASCs initiate and involve themselves in the discussion relevant to strengthening the minute aspects of training. Nothing will be more welcome for the UGC than the collective decision of the Directors of ASCs to assume the responsibility of reintroducing accountability in teaching profession. Nothing will be more respectable than the teachers' associations taking necessary initiative in this regard.

The ASCs can perhaps start with a spirit of optimism that their initiative would not meet any resentment from teachers. Because even the teachers realise that with the emerging trend for privatisation, the society has already started an informal audit of the professional calibre of teachers in higher education. They must realise that they should not give an impression that they resist positive change through accountability. After all accountability does not bring humiliation but adds respect to the profession, and of course teaching is a profession that commands respect.

Reading the Contemporary

(Contd. from page 2)

talk of restructuring the syllabus to suit the changing demands of the time. Yet how precious little has been done over the decades can be gauged by a look at the syllabus of either B.A. or M.A. English in any university. Not only the syllabus but also the question patterns. That the syllabus is foisted upon the students and teachers is a specious truth. Hardly any choice list of favourite reading is prepared in the class. And the ubiquitous nonavailability of time circumvents any discussion on it.

If reading the original text is all too scarce, developing a challenging and a more relevant topic for writing an essay on it is even more rare. Considering literature as a criticism of life involves attempting an assignment that is more centrally related to the life we live. Art for art's sake or art as a social response, it is worth assessing why we learn/teach literature. Most, if not all, do not know why they want to learn/teach

literature. Given the unplanned and unwieldy growth of our higher education, the blurred aims of the learners compounded by the blunted teaching confounds us worse than confusion.

To do away with all this we can begin with collaborative learning and teaching. Literature as a criticism of life entails finding for oneself what is there in a text and sharing it with the others, teachers or fellow students or both. Students must work with fellow students of varying linguistic competence and literary flair in a joint venture of enhancement of mutual understanding and acquisition of perception and skills. This sets them free from the monopoly of the teacher and one-way teaching in the class. In any formal or informal discussion, the teacher can himself avail of the current of thoughts which give him clues for even more penetrative germinal discussion which would be quite useful for teaching.

University and Social Transformation in India

A.N.P. Ummerkutty*

The System of Higher Education

In India there are 200 and odd universities and more than 7500 colleges with nearly 50 lakh students and 2.8 lakh teachers. This represents an enormous expansion from the condition in 1947. During the post-independence period the universities have increased approximately 10 fold, colleges 15 fold, students 30 fold and teachers about 25 fold. The universities fall into a few distinct categories:

Affiliation type: This is the predominant type which is supported fully by state governments and caters to more than 90 per cent of the students. They are the real inheritors of the British Indian higher education and number about 140. In the affiliating university there is a main campus in which the administrative headquarters are situated with several teaching and non-teaching departments; offices of Vice-Chancellor, Pro-Vice-Chancellor, Registrar and others; a huge Examination Wing under a Controller of Examinations; and other facilities. There are also several colleges affiliated to the mother university and located far and wide in the geographical area coming under the jurisdiction of the university. (Goa University has probably the smallest number of such colleges about 40, while Bangalore University is said to have nearly 300 colleges. Calicut University has now more than 100 colleges including 2 centenarian colleges). Colleges are of varying quality and size and in general only a very few are able to maintain even a semblance of a campus life which can be described as academic. Great majority of the colleges are now reduced to mere coaching centres (the effectiveness of even that is doubtful) for exams to be conducted by the mother university in a massive, impersonal exercise which has been severely criticised in recent years because of its many inherent weaknesses. University life exists only on the main campus of the affiliating university and in a very restricted way on the campuses of some major colleges. Strength of students (even of teachers) on the main campus of the affiliating university normally represents only a frac-

tion (in the case of Calicut University, less than 1 per cent) of the total strength. It can be seen from the above that the real "university campus experience" which is the noblest and the sublimest experience in the process of higher education is available to only a small percentage of students of an affiliating university. This real life situation is indeed frightening. If the affiliating university is hardly any university at all in the noble and sublime sense and if 90% of our student population is educated by them, what role one can presume the affiliating universities can have on the moulding of the personality and the character of the youngsters and what role they can have at all in the transformation of society at large in a healthy, creative meaningful way?

Residential Unitary Universities: These are generally single-campus unitary type of institutions located unevenly in different parts of the country. Most of the central universities belong to this category, though there are some exceptions like Aligarh Muslim University and Banaras Hindu University which affiliate some local colleges in their geographic vicinity. University of Delhi is unique in that it has a few constituent colleges in addition. Most of these unitary universities still maintain fairly charming campuses though some have deteriorated to mere tolerable levels. Though small in number, the unitary universities play an important role in the life of the students enrolled in them. Despite occasional turbulence on the campuses, generally good academic atmosphere prevails in most of these campuses and the relations between the teachers and students are also reported to be satisfactory.

Deemed Universities: This is a new category of higher education institutions mainly born and brought up in free India. Essentially they are single-campus institutions which perform all the functions of a university like teaching, research, practical training, extension services etc. Most of them are specialised in one particular discipline or a group of related disciplines with great deal of emphasis on higher reaches of the discipline/disciplines concerned. A host of institutions like Sree Chithra Tirunal Institute of Medical Sciences, Trivandrum, Sri Sathya Sai Institute of Higher

*Vice-Chancellor, University of Calicut, Calicut-673 635.

Learning, Anantapur, Thapar Institute of Engineering & Technology, Patiala, Tata Institute of Social Sciences, Bombay, Indian Institute of Science, Bangalore, etc belong to this category. They are all considered as prestigious centres of higher learning and generally maintain very high academic standards both in teaching and research. The students enrolled in these institutions are relatively very small in number but they are considered the cream of Indian educated class. Because of this quality education many of their products find their way into elite positions in Government or top public & private sector companies. Many others even find green pastures abroad in US & Europe. Since the Deemed to be Universities are specialised institutions performing useful functions in limited disciplines, they cannot be equated with the traditional universities which encompass the totality of pursuit of human excellence and which make possible the unlimited development of all his endowments. Despite this limitation the role of Deemed Universities in the transformation of Indian society, particularly at the higher echelons of various newer enterprises and of government itself is considerable.

Specialised Universities : These include nearly 30 Agricultural Universities, Medical Universities, Language based Universities (Tamil University, Telugu University etc), Technical Universities, Veterinary University and Open Universities. Like the Deemed Universities, they are also performing specialised functions and their contribution to the developmental activities in various fields are commendable. The role of agricultural universities, for example in the green revolution and in making the country self-reliant in foodgrain production and in other agriculture production is substantial. These universities have proved that transformation of society is possible in a different way — by changing the external milieu by introducing modern technology in various developmental activities. Through these specialised universities and institutions the Indian society has experienced for the first time and on a massive scale, the intense impact of technology on man and his society. This is no mean achievement which has posed a fundamental question before the traditional universities on the possible role a university can play in the life of society and its transformation. Indeed these specialised institutions and universities pose even a more fundamental question as to the very definition, meaning and mission of a university. Can a university continue its life as a community of scholars, intellectuals and high moralists, all dealing primarily with the life of mind? This, again,

leads to a more fundamental question : What kind of university education is needed for what kind of society of tomorrow in the Indian context? What is the role of a university in the making or even unmaking and remaking of the society?

The Challenge of 21st Century

We often talk of preparing ourselves for the 21st century which is just 5 years away now. For us in this country the event could be a historic one for we would have crossed half a century mark of our Republic. Now the question is asked as to whom does the 21st century belong? It has been variously claimed that the century may belong to the East, meaning the nations on the fringes of Asia-Pacific including China, Japan and other smaller nations of this area or to Asia in general, if major powers of this continent (namely India, China and Russia) come together. But, the greater possibility is that the 21st century may belong to none in particular but may signify the birth of a new era when the disparity between nations and blocks of nations might get significantly reduced and the birth of a genuinely global human civilisation where human spirit might be nourished for the first time in history to grow and flower freely might be heralded. To believe or to propagate the belief in one or other form of domination (regional, ideological or otherwise) is to perpetuate discord and conflict in the affairs of men. A more desirable and viable state of affairs is the annihilation of domination of any segment of humanity over others and to truly endeavour for a dominationless, freely co-operating and fully functioning human existence. Nearly a century ago Kipling lamented that the 'East is East, and West is West, and never the twain shall meet'. Recently in a similar vein persons like Lester Thurow (author of the best seller, *Head to Head : The Coming Economic Battle Among Japan, Europe and America*) and Klaus Schwab, President of World Economic Forum which played host to the famous Davos conference, also seem to be lamenting that the South is South and the North is North and the twain may not meet. The hope of humanity lies in demolishing such misapprehensions regarding the alleged incompatibility between the East and West and the South and North and in bringing in a new era of true equality and co-operation between all nations, races, regions, religions and languages. To me the 21st century promises the birth of such a mind-enchanting era. Also I consider education to be the fundamental tool for bringing about such a profound change in the mindset and vision of the human beings about their place and role in the universe. The type of society we should aim at for

the 21st century is now very clear. It should be a global society with no disparity or at least minimal disparity between South & North and with no single nation or group of nations dominating over the affairs of the other nations. And the type of higher education system to be evolved should be such that it should be instrumental and catalytic in the creation of a harmonious, global society. Well, this is easier said than done for the complexities involved in the process are immense and the constraints, even hostilities, to be overcome are innumerable. Of the more than 180 independent countries, nearly a fourth are dubbed as Least Developed Countries (LDCs) with average annual income less than 300 dollars while 30 or so top-bracketed nations have income exceeding 10,000 dollars. This disparity in economic development is so glaring and public that it is directly reflected in the socio-political status assigned to various nations in their mutual relations. Education being the premier most social instrument to bring about desirable changes in the life of the people, it is obvious that the basic aspirations of different countries in respect of educational aims and objectives would differ greatly. The stakes in this conflict of educational aspirations and attainments are very high and one wonders whether a global approach to define educational goals for the 21st century is possible at all. For example, Allan Bloom in his best seller, *The Closing of the American Mind*, has advocated a very unegalitarian elitist view of university education. He regretted "large black presence" in some of the major U.S. universities and the consequent "education of openness" with its celebration of diversity and equality of opportunity. According to him this open-door policy to the blacks and the browns was threatening the social contract that had once defined the members of American society. Though Bloom's book was a best-seller, his views have been criticized by many leading intellectuals and educationists in the US itself. However, the fact remains that in the developed countries there is a strong school of thought which advocates a higher education system which would help to maintain and consolidate the top hierarchial positions of the developed countries in their relations with the rest of the world.

On the other hand there are still several countries where the facilities for higher education are minimal both in quality of the education imparted and in the number of institutions available for enrolment. In these countries access to higher education is almost a luxury since even the mere existence of life is at subsistence level. What kind of university education can be con-

ceived for this kind of society in vast areas of Africa, Asia and Latin America? Grandiose visions of "Education for the 21st century" appear a far cry for the underprivileged, undernourished millions who happen to inhabit many of the LDCs, while the fundamental fact remains that education is the only effective instrument available to them to realize their dreams of development and upward mobility.

India presents a picture almost in the middle of these two extreme positions. In fact, India has rightly been described recently as a "poor developed" country. The description refers to the many sophisticated achievements made by the country in the fields of Science, Technology and other related areas while still being included among the LDCs as far as the general living conditions, economic growth rate and per capita income of the people are concerned. The description seems all the more apt for the higher education system whose salient features have already been described earlier. Some of our higher education institutions and courses are comparable to the best in the world while there are innumerable others whose standards are miserably low. Further, in spite of the enormous size of the higher education system that exists in the country, only 6% of the eligible age group are able to enter the portals of colleges or universities. With fast increasing literacy there is going to be greater demand for school and college education in the years to come. Because of all these factors attention will be focused here only on India's educational scenario and on what kind of enduring approaches, policies and practices can be formulated for the coming decades. It is hoped that such a formulation will "build up connections between the global, the national and the local levels, between what is universal and what is specific" for the extreme disparities found between North and South as well as the deep tensions that prevail between them are almost entirely experienced within the wide range of the educational edifice that exist in the country itself. The broad approaches, policies and practices which should form the essential components for "Education for the 21st century" in respect of a great part of humanity, which is India, are indicated below:

Universities as Centres of Excellence

The most urgent and the all-embracing issue is the restoration of universities as centres of excellence, where pursuits of higher learning, critical intellectual exercises and reflexive moral actions are freely undertaken. To teachers, to students, to the supportive administrative staff and to everyone else concerned with

higher education, University life should provide the correct perspective of human life, in its individual, social, national and global aspects. This is exactly what Jawaharlal Nehru once said. "An University stands for humanism, for tolerance, for truth. It stands for the onward march of the human race towards even higher objectives. If our Universities discharge their duties adequately, then it is well with the nation and the people". Obviously our universities have not been able to discharge their duties as expected of them in a free country. Instead of becoming oases which could successfully resist the surrounding desert winds, the universities appear to have actively contributed to the process of desertification of life. The urgent need of the time, therefore, is to restore the universities to their pristine glories so that the oasis nature of these institutions is reestablished and the process of national and global resurrection is expedited.

Quality Assurance

The quality of higher education should be considerably enhanced while its entry base should be consistently expanded so as to accommodate all the new aspirants. This concern for quality should cover all the aspects of higher education including the moral concern which is nothing but a genuine consideration for the fellow beings. But the college education as practised today in the country is almost totally devoid of any worth, scholarly, intellectual or moral. The most crucial measure of any higher education system is its attainments in its twin basis of autonomy and accountability. Without this no quality enhancement is conceivable. The affiliation system, has lost all autonomy and accountability and therefore its usefulness and credibility. Since the affiliating universities constitute bulk of the university education in the country involving about 90% of the students and teachers and about 70% of the institutions and as it is in total disarray today, some immediate corrective actions are required to make it viable and fruitful, once again. At present the colleges affiliated to a university exercise no autonomy at all and are practically reduced to coaching centres for public exams to be conducted by the university at some remote time. As a structural adjustment in the affiliating system, colleges should be given adequate amount of autonomy so that they could also be accountable for whatever education they impart. University may continue its regulatory functions like maintenance of standards, supervision of rules and regulations regarding admission of students, appointment of teachers, etc. But regarding the real educational process the colleges should share the autonomy

with the university and there should be vertical demarcations in the autonomous functioning of the university and its affiliated colleges so that gradually the campus life of colleges becomes rich, meaningful experience. Campus life (whether university or college) must be experienced as an intense process involving close and intimate academic interaction between students and teachers and should result in the all-round development of the former. Instead of mere parrot-like lecturing or dictating notes, the teachers will have to inculcate in the students a sense of inquiry so that they might improve upon the transmitted knowledge through their own private efforts. It is not the acquisition of more knowledge but the capacity to acquire the same relevant and useful to any occasion and to individual and social needs that is important. Teachers should help the students to acquire this subtle capacity in addition to transmitting whatever knowledge they possess. Only such bold, independent efforts on the part of the students, aided and guided by competent teachers will enable them to acquire an integrated growth which will simultaneously ensure expansion of knowledge, intellectual vitality and moral uprightness. Thus, college campus should become the oasis of the local community just as the university should be the larger oasis of the whole society.

The autonomous college idea launched by the UGC sometime back is a welcome step in this direction. But instead of limiting the autonomy to a select few, leaving the rest of the colleges to the one sided harsh influence of hot, dry desert winds of the surrounding turbulent society, all colleges should be allowed to exercise autonomy to introduce new need based, life-oriented courses, draw up syllabuses for the same, enlist faculty members, set up necessary infrastructure, etc in areas to be chosen by the colleges themselves. Such an arrangement would enable the colleges to assert their usefulness to the community and thus to resist the one-sided onslaughts often thrust upon them. The novel autonomous functions of colleges can very well be carried out under the regulatory supervision of the university and financial control of the government/management. The autonomy so exercised by colleges need not be uniform in amount or quality in the beginning. It may vary from full and complete autonomy (as envisaged by UGC) to a very limited autonomy of one or two courses. But once the concept of college autonomy is accepted such initial variations matter little. In theory, college autonomy would mean blooming of a thousand flowers in the field of creative and meaningful educational process and ending of the present sterility and built-in irre-

sponsibility of the affiliation system. It will also mark the beginning of substantial quality improvement and institutional accountability.

Open Universities

In India, only 6% of the youth (between the age of 17 - 23) eligible for entry into higher education, are actually enrolled in colleges and university departments. In developed countries like the U.S., the enrolment of eligible age group in higher education is 50%. It is obvious that doors of higher education will have to be greatly widened if education as a basic human right and as a universal human value is to get fully accepted in our country. However, since the country may not be able to cough up more money on higher education it has been rightly pointed out that future expansion of higher education should be through the open mode. By opening more Open Universities, atleast one in each major state, and also by making use of the enormous infrastructural facilities already existing in colleges and other institutions we can achieve this expansion at reasonable cost. In fact, if "learning and education are ends in and of themselves, to be aimed at by both individuals and societies and to be promoted and made available over the entire life time of each individual," the 7500 and odd colleges spread over the length and breadth of the country will have a vital role to play. The autonomy suggested for the colleges will provide ample room for various open education programmes as well. In fact, this could go a long way in quickly expanding the higher education facilities to large segments of population, both young and old, with minimal additional cost. It could also make the colleges the focal points for pursuit of excellence by the local community as a whole.

Universities and National Development

To repeat a question posed earlier: Can a university in a developing country continue its life as a community of scholars, intellectuals and high moralists, all dealing primarily with the life of the mind and only secondarily concerning themselves about the developmental needs of the surrounding society? We have seen that the specialised universities and to some extent residential and deemed universities have played crucial roles in the transformation of Indian Society by helping introduction of modern technology in various developmental activities. It is imperative that the affiliating universities and the innumerable colleges affiliated to them also play their legitimate roles towards the creation of a knowledge-inspired, technology-supported society in this country. This will become possible if the affiliating system (the university depart-

ments and the colleges) reconsider their priorities seriously and give adequate importance to development-oriented research and courses of studies. Most of the courses of studies conducted and the researches carried out at present are purely of academic nature with little impact on developmental activities that go on in the surrounding society. It is this academic aloofness and supreme indifference to the problems of the society that has alienated the university community from the beehive of national reconstruction. It is also the reason why they are not able to assert a positive influence on the society at large but are being toyed about by various external forces.

Affiliating universities and their numerous colleges should urgently recast their courses of studies and research programmes so as to link them as much as possible with the developmental activities that take place in the surrounding society, particularly the industrial activities. Recent scheme of the UGC to vocationalise some of the graduate programmes to suit the present societal needs and thus to make the university education meaningful and relevant to that extent is a most welcome step. However, much more is required than a token graduate programme. It is instructive to note that the relationship between universities and industries is very close and highly mutually beneficial in the developed countries. Such relationships are given more and more importance in the most advanced countries like the U.S. For example Porter in his *The Competitive Advantage of Nations* (1990) stressed the need for the US to give top priority in undertaking long term research programmes in association with the universities to maintain competitive advantage over other developed nations. In fact, there has been a "rapid growth in both the number and diversity of University-Industry research programmes and technology-based economic development policies", in that country. Here is another statement on the binding nature of the University-Industry relationship. "A critical element in the broad sweep of University-Industry alliances involves the manner in which industry perceives Universities as sources of technical knowledge in the development of new products and production process. In an increasingly information-intensive economy, where research and education are critical variables for maintaining competitive advantage (particularly through the production of knowledge or 'thoughtware' that has commercial applications) this issue is likely to take on added significance." (John Rees & Keith Debbage. *Industry Knowledge Sources & the Role of Universities. Policy Studies Review* Spring 1992). They added that recent studies have indicated

considerable increase in the contribution of academic research to industrial innovations.

This sums up the ironical situation the nations of South in general and India in particular encounter. While in the North there are purposeful, concerted efforts to bring together the university programmes with industrial growth and diversification, in the highly backward nations of the South the mutual indifference and almost total alienation between the two continue undisturbed. If the affiliating universities and their innumerable colleges persist in their present retrogressive attitude, how can we even hope to bridge the gap between the South and the North?

Special care for weaker sections and women is an issue on which our firm commitment and concern should be reiterated. Disparity between North & South becomes insignificant before the stark realities that haunt us right at home. Only 6% of the eligible age group of the Indian youth get opportunities for higher education. Despite all the efforts to expand the base of higher education both in the formal and non-formal sectors large segments of our population will have no chance of access to higher education because of the inherent socio-economic handicaps. In a layered society like ours, traditionally depressed lower strata including SC, ST & Backward Classes require conscious and consistent support and encouragement in the field of higher education for several years to come. There is nothing wrong if reservations are made for admission of students and recruitment of teachers for these backward segments until a reasonable level of equality of opportunity is available to them in a natural way. Similar reservation is also needed in the case of women who constitute half of our human resources but whose presence in the higher education is still pitifully poor. The gravity of the situation can be realised when one notes that the percentage of females among literates and school going children are far less than their male counterparts. Recently, 30% reservation has been made for women in the electoral system to local bodies in some states. But unless an identical percentage of reservation is made available to them in the educational opportunities it will not be possible to find adequate number of educated candidates to fill up the representative vacancies. I am aware of the intense social tension that already exists in the country in regard to the reservation policy. But unless as a nation, we are able to approach the problem with a deep sense of moral commitment, equanimity and long-term national perspective, we will have no right to speak about the elimination of disparity between North and South.

What we are not prepared to practise at home should not be expected from the larger global society outside.

In a world where uncertainty is increasingly becoming synonymous with life itself, predicting or projecting anything about future is a risky and often dangerous business. In fact, the very suggestions for new approaches or lines of action could turn out to be the reason for its very negation for forces against such suggestions could soon become active and get mobilised rapidly. But the university has nothing to fear from such a possibility. As Henry Louis Gater Jr says in his *Louse Canons - Notes on Culture Wars*, "What distinguishes the University from other battle grounds such as the media and politics is that the University has a special commitment to the search for knowledge, one based on a process of intellectual openness and inquiry. Multi-culturalism can stoke this critical spirit by transforming the University into a crucial meeting ground for different view points". Therefore our present efforts should concentrate on alleviating and gradually eliminating the glaring disparities that exist between the South and the North and for creating a more unified, more integrated, harmonious, mutually friendly human fraternity in the 21st century through a thorough recasting of the higher education system for our own country.

UNIVERSITY NEWS

A Weekly Journal of Higher Education

	Inland		Foreign	
	Institutions	Academics/ Students	Airmail	Surface Mail
	Rs.	Rs.	US\$	US\$
1 Year	220.00	125.00	140.00	100.00
2 Years	400.00	225.00	260.00	180.00
3 Years	600.00	325.00	380.00	260.00
5 Years	800.00	500.00		

Single Copy : Rs. 7.00

Subscription is payable in advance by Bank Draft only in favour of Secretary General, Association of Indian Universities.

Advertisement tariff available on request.

Address Subscriptions & Enquiries to :

Deputy Secretary (Publications)
Association of Indian Universities
AIU House, 16 Kotla Marg,
New Delhi-110002.

Telex: 31-66180 AIU IN Fax 011-3315105 GRAM: ASINDU

Axe Falls on Low-Priced Books

M.S. Rana*

Knowledge is key to overall growth of man and investment in the spread of knowledge is the best investment in human development. With these noble aims in view, the developed countries and their book trade in the West formulated policies to support educational planning in the developing countries of the Third World. At the international level the UNESCO, launched "Education for All Programme". It provided educational resource personnel and funds for setting up educational institutions, research laboratories and libraries and production of quality textbooks in developing countries of Asia and Africa. The book trade contributed its might by providing moderately priced soft-cover editions of standard textbooks specially produced for the developing countries. At the inter-government level joint standard textbooks production programmes were introduced so that good quality college and university level textbooks were available at affordable price to students and libraries in the Third World. We all are familiar with Indo-American Co-operative Publishing (IACP) Programme. This Project has issued over 2,400 American titles reprinted in India by leading publishers in low-cost editions. The USIS (United States Information Service) subsidy for the copyright fee and partial support for the Indian publishing costs made possible the low retail prices. The current IACP catalogue lists 131 titles covering the Arts, History, Journalism, etc. The IACP collaborative venture, supported by the Book Programme of the United States Information Agency (USIA) allowed Indian publishers to acquire and reprint serious and thoughtful American titles in the social sciences and humanities. This programme was linked to the PL480 funds. The funds have nearly exhausted and naturally the low priced editions of US textbooks are no longer available to students and libraries in our colleges and universities.

Another important international low priced book programme which provided highly relevant textbooks under the logo ELBS (English Language Book Society) and whose books can be seen in the Satchel of college going students and on the shelves of academic libraries in the country is passing through a period of crisis.

Its funding agency the Overseas Development Administration (ODA) of the British Government is planning to phase out the scheme. Unlike the IACP, the ELBS is an international scheme for the benefit of the Third World students. It makes available to them at one-third price some of the best, up-to-date British textbooks on various subjects specially in sciences and technologies, which are currently prescribed in the courses of universities and vocational training institutions in United Kingdom.

The ELBS Low-Priced Book Scheme was launched in 1960s by the Overseas Development Administration as a part of the British Government's Overseas Aid programme. It covered 54 developing countries mostly of Asia and Africa where standard textbooks were required to raise the quality of education at par with other countries. The scheme is administered by a non-governmental agency — International Book Development Ltd., London. It makes available up-to-date low priced, unabridged and identical with the original editions of British textbooks to students in developing countries of Africa, Asia, Pacific, Caribbean and Atlantic and Mediterranean and Near East countries. Incidentally India is the largest single consumer of these books. Any change in the scheme or its reported closure will naturally affect Indian academic interests. Indian students in polytechnics, colleges and universities would be hard hit by its closure. In a way ELBS books have provided legitimate incentive to students to own them and thus perform better in studies. Each new book to be published under the ELBS logo is evaluated by subject experts based in UK universities and polytechnics. Generally, these experts have overseas experience and are fully aware of the ongoing teaching courses in developing countries. Naturally purchase risk factor in selecting a ELBS book is removed as the quality and currency of thought contents have already been carefully gone into by subject experts. The ELBS administration also invites opinions from college and university faculty and students about these books. It also invites suggestions for new British Publishers' textbooks in the scheme. ELBS representatives in underdeveloped countries also interact with students and teachers to seek their response to the ELBS books and their usefulness in academic programmes. Thus a very useful experience and users

**Librarian, University of Roorkee, Roorkee-247 667.*

point of view goes into the selection of new titles in the scheme. In a way ELBS books are published to meet educational programmes of its users. These undergraduate quality textbooks are available in the fields of economics, business and law, science, medicine and nursing, engineering and technology, and agriculture and veterinary science.

ELBS books are not produced by any state agency and thus these are absolutely free from any ideological tag as we had in the case of Russian books published by the state controlled agencies such as Kniga, Mir and Raduga of the erstwhile USSR. ELBS books are published and marketed by their original publishers with the aid of a subsidy which enables them to be sold at between one third and one fifth of the price of the cheapest standard edition. Twenty two leading publishers of U.K. are participating in this scheme. Among others these include Backwell Scientific Publications, Butterworth, Heinemann, Churchill Livingstone, Hodder & Stroughton, Longman Group, Macmillan, Oxford University Press, Prentice-Hall and Stanley Thomas. A wide range of publisher tycoons have made available their prized textbooks to millions of students in developing countries of the world. These books are promoted and marketed by their original publishers and made available through normal trade channels. The usefulness of the ELBS editions can be judged from a marvellous sale of 8.90 lakh titles in 1994.

The ODA proposal to phase out the scheme emanates from a review of the scheme conducted by the ELBS administration. The review concluded "that despite many successes, the scheme was failing to reach the target community, i.e. the poorest students in the poorest country and therefore it was not meeting the ODA's developmental objectives. It has been noted that in India the major beneficiaries have been rich doctors and not poor students." My experience as a university librarian for over two decades has been that all students have to buy basic textbooks. Weaker section students have book grants to buy textbooks and all such purchases are regularly verified by the librarian. Moreover, libraries buy books in bulk for their members. To be very honest ODA's findings look very unrealistic. In Roorkee university library we buy undergraduate textbooks worth 4 lakh rupees per annum and students make purchases worth 2 lakh rupees against their book grants. ELBS textbooks form an important segment of such purchases. We strongly feel that the EBLs administration should invite views

of undergraduate students in science and technical colleges and in universities. It should also elicit views of university teachers and librarians on this very important academic issues. Non-availability of low priced ELBS textbooks will certainly harm the interests of students. The ELBS administration should review the scheme in the light of the above facts.

Access to a wide range good quality textbooks at affordable prices is a gateway to knowledge without any let or hindrance. It motivates students to self-study, creates self-confidence in them which is an imperative for the flowering of their personality. A vast mass of student population in developing countries will become rudderless, if we deprive them of access to quality books such as made available by the ELBS over the last four decades. Any change or termination of the ELBS Scheme will have adverse effects on the educational development of the Third World countries. In our context 46.11 lakh college going students, 2.76 lakh faculty members spread over 180 universities and 7513 colleges would be directly affected by any abrupt termination of the ELBS scheme.



CENTRAL INSTITUTE OF ENGLISH & FOREIGN LANGUAGES

(An Institute of Higher Education
Deemed to be a University)
HYDERABAD-500 007

DEPARTMENT OF DISTANCE EDUCATION

ADVERTISEMENT No : V/95

POST GRADUATE DIPLOMA IN THE
TEACHING OF ENGLISH
THROUGH THE DISTANCE MODE

Applications are invited for admission to a one year Correspondence Course beginning December 1995, leading to the Post-Graduate Diploma in the Teaching of English. For a copy of the prospectus and the application form please write to the Head, Department of Distance Education, CIEFL, Hyderabad 500 007 enclosing a crossed Demand Draft for Rs. 15/- in favour of the Registrar, CIEFL.

Last date for the receipt of filled-in applications is 1 August, 1995 (1 September 1995 with a late fee).

G. Venkateshwer Rao
REGISTRAR

Investment in Science & Technology

Shri Madhavrao Scindia, Union Minister for Human Resource Development, delivered the Convocation Address at the sixth convocation of Pondicherry University. He said, "There is a strong case to step up our investment in Science & Technology from its current level. One hopes that the emerging & liberalised economy will provide additional resources and incentives for increased investments in indigenous research. We have to re-examine the role of the Government and the Industry in this regard. Today Indian private industry spends far too little on the research and development effort. Long term industrial growth clearly demands far more investment by private enterprises in pure and applied research". Excerpts

When India unshackled the chains of slavery 48 years ago, she was virtually moribund, characterised by massive poverty, illiteracy, unemployment, high infant mortality and low productivity, low saving and investment, low technology and a low industrial and agricultural base.

In order to solve these problems, planned and strategic economic development, under a mixed economic structure was initiated soon after Independence through the Five Year Plans. Industrial policies, agricultural policies, and trade policies, policies relating to education, science and technology and human resource development have been revamped and reoriented to force the pace of economic and social development. Today the country is on the threshold of a virtual transformation.

India has become an exporter of technology and manpower, possessing the third large reservoir of scientific and technical manpower in the world. In areas of space research super-conductivity, lasers, biotechnology, ocean development silicons and avionics we have made remarkable progress.

Our performance, especially,

in the midst of dogging constraints — natural, religious, political, social and economic — appears impressive and laudable. But then it is also a fact that the overall pace of social and economic progress in India is not commensurate with our aspirations and our potentialities.

In this context, what should be the future agenda of higher educational institutions like Pondicherry University?

Firstly, there must be an even greater emphasis on Science & Technology, focussing on innovation and development of new processes and techniques. Secondly, the evolution of enlightened management systems for efficient management of resources; and thirdly, creation of a reservoir of skilled young men & women capable of handling such systems and developing them further. Fourthly, creating institutions for Community Education, which are relevant to the Indian situation and are aimed at professionalising the techniques of Agriculture, Animal Husbandry & Fisheries, etc.

These four objectives can be achieved if we create young men and women with values, ethics and wisdom. In the rapidly changing

socio-economic climate, universities shall have to perform the task of 'National Reconstruction' with an emphasis on social equity and justice.

The situation today, is that, whereas for many skilled and vocation oriented jobs qualified personnel are not available, there are millions who have acquired university degrees but cannot get jobs. This has to be reversed by making curricula practical and job oriented. We must create an educated workforce with an employment potential. Professional and Vocational education is the need of a growing economy.

Radical changes are needed in the traditional curriculum to cater to the emerging needs. The thrust of tertiary education should be to ensure the application of concepts learnt to real life situations. In fact, learning should be based on experiences, if it is to be really effective. The tilt towards application-orientation, experience and case study method in our course structure will have tremendous impact in imparting appropriate knowledge and skills.

It is imperative that the basic infrastructure required for first-rate research should be augmented in the Universities. In the present context of financial difficulties, a challenge before the University community is to tap sources of funding from within the institution and outside. Science & Technology agencies and other user agencies should come forward to set up research facilities in universities.

There is a strong case to step up our investment in Science & Technology from its current level. One hopes that the emerging & liberalised economy will provide additional resources and incentives

for increased investments in indigenous research. We have to re-examine the role of the Government and the Industry in this regard. Today Indian private industry spends far too little on the research and development effort. Long term industrial growth clearly demands far more investment by private enterprises in pure and applied research.

I am aware that in the light of the fundamental role assigned to higher education in national well-being and development, it is necessary to provide sufficient resources to the Universities. Hon'ble Prime Minister has already announced a rise in the educational expenditure to the extent of 6% of our GDP as contemplated by various educational commissions and as the Minister for Human Resource Development, it would be my endeavour to

obtain more resources for higher education.

I wish to stress on the paramount importance of nurturing Indian values in our students. What we must ensure is a modern education but based on our basic values and culture and not on new traditions imported wholesale from other lands. The acquisitive urge and crass consumerism spawned by lifestyles of those in developed countries might stifle the spiritual and intellectual content of our civilisation.

All education, technologies, innovations & processes must be with reference to the Indian content, tradition and heritage. A synthesis between modernity, creativity and practicability, blended with a traditional content is what is best suited to our needs.

professional areas like Dentistry, Nursing, Catering, Fine Arts and Music.

Likewise, lack of resources has not also deterred us from charting out new paths promoting quality and excellence in tertiary education.

The paradigms of higher education had changed dramatically since last century. Our University's structure and norms are based on century old paradigms that are no more valid today. In our perception, the University should be large, with not less than 10,000 students in a campus to be academically viable and should be unitary and to an extent residential in character. The unit of higher education should not be the predesignated degree, but the individual courses conceived and offered by competent faculty — without the prescription from above and with a freedom to change the content as and when the new knowledge emerge. With the replacement of degree as a unit in the higher educational level with stand alone courses, the student must be able to construct his own curriculum based upon his interest and talent and at a pace he chooses suiting ability and affordability. It should also be flexible to facilitate them to acquire knowledge from other institutions which are not available in our University concurrently. It is with these new sets of paradigms, we have introduced a choice based credit system a few years back and it is now in vogue successfully.

Our students freely take credits across the traditional boundaries and freely supplement their credit requirements from leading national academic or professional institutions like IITs, BITS and even from the non-formal institutions like

**Excerpts from the Report
by
A. Gnanam
Vice-Chancellor
Pondicherry University**

Pondicherry University is the youngest among the established Central Universities. Hardly 10 years ago, the dream of Pondicherrians came true in formally passing the Act to establish this University. We have moved to this new campus, only four years back and we are still in the process of adjusting ourselves with all the inadequacies and constraints, but that had not deterred us from commencing our academic activities with 2 Directorates, 6 Schools of excellence, 15 Departments, several Centres of specialization and an Institute of Community Development, and a Distance Education Centre.

Being an Affiliating University, a unique phenomena among the Central Universities, we have as many as Twenty affiliated Institutions located in all the enclaves of the Union Territories of Pondicherry, Andaman and Nicobar and Lakshdeep islands. These institutions are located in Pondicherry, Karaikal, Mahe, Yanam, Port Blair and Mayabunder with an overall student enrolment of roughly 9600. Besides, Medical, Engineering, Law, Arts and Science Colleges, we have Teacher Training Institutes, Research Institutes offering training in scientific and social science disciplines. There are also institutions affiliated to train in highly

Indira Gandhi National Open University. In order to facilitate this inter departmental, inter institutional learning we have now entered into collaborative teaching and research endeavour with several national and international Universities, which include 5 Universities in France, one each from Canada and Australia besides IITs and IGNOU within India.

It is our perception again based on new paradigms, that the general education should continue to play its pivotal role in lifting up the cultural ethos and sustaining the progress of the Human society as a whole. At the same time, there must be inter-connectivity with responsibilities one should take as a contributing member of the society and social life. Many rush with the idea of vocationalizing the general education to achieve the better aim, which will be counter productive to the objectives of the general education. One should therefore vocationalize the individual after he or she attains certain maturity and after completing different levels of general education. In other words, we should vocationalize the individuals — students — and not the education. In a technological era, the special skills required to man the economic and service sectors of the society are so special and so limited that they do not require 2-3 years of training. A short term training not exceeding 3-6 months and some times even a few weeks would suffice to vocationalize the man. All we have to do is either to diversify the vocational institutions or to start new ones, thus opening up opportunities for acquiring special and diversified skills that would fit them to special jobs. It is with this concept we have established constituent vocational education institutes in our University.

Again the set of paradigms that had precipitated in the establishment of non-formal — distance/correspondence — education was that we should provide opportunities of higher education for those aged groups that had no access to higher education when they were young. This idea about open learning has now changed. It has now been considered as essential and parallel mode to meet the growing demands for higher education. Therefore we have this year established 'Pondicherry University Distance Education Centre' to supplement our formal education programmes and also to reach out our clientele who are at far off enclaves and union territories.

We have plans to introduce summer semester in one form or other, with the help and co-operation of our staff, students and faculty to maximise the use of the university's infrastructural facilities such as buildings, hostels, library and other common facilities that remain idle during summer months, possibly from the next summer.

In addition to the free and stand-alone credit courses that lend themselves for various combinations leading into inter-disciplinary and socially relevant degree courses, we have also made certain conscious efforts to evolve several new degree programmes. They are (1) Master's Degree in International Management (2) Master's Degree in Tourism Administration (3) M.A. in French Translation (4) M.A. in Functional Hindi, M.Tech., and M.C.A. in Computer Science.

Our students are from all over India, specially selected based on merit through entrance tests held at eight major metropolis in the nation. About 6% of them are foreign

students mostly from Third World Countries. Presently we select one out of 10-12 aspirants on an average to the various postgraduate courses, which in some special courses works out to one in hundred or more. Nearly 40% of our students in the campus are research scholars.

Our distinguished faculty have been very successful in getting research project support from various agencies worth more than a crore of rupees for 52 ongoing research programmes.

The University is running a regular Academic Staff College with the UGC support. It runs orientation courses to the young faculty who have joined the teaching profession at the tertiary level and useful refresher courses for the senior faculty drawn from all over India.

The National Service Scheme units of our University as before have been active in extending our services to the society in all the dimensions such as Literacy Programmes, Poverty Alleviation, Health Care Services, including the AIDS related activities, Environmental issues, etc.

Our other extra curricular activities in the area of sports and games and other talent oriented competitions such as debates, quizzes and the like are getting equal attention on par with our academic programmes as could be seen from the various events in which our students participated with commendable success.

This year in this Convocation 2054 candidates are being admitted to various Degrees of which 1618 are Bachelors, 436 are Masters, 52 are M. Phil. and 24 are Ph.Ds.

Grants Formulae for Varsities

Formulae for computing the quantum of grants to be given to Indian universities will be implemented all over the country from the financial year commencing April 1997, to put an end to the existing ad hoc system. According to the University Grants Commission (UGC) Chairperson, Dr Armaity Desai this was being done in view of the financial crunch being faced by universities in the recent years. Dr. Desai was addressing the Vice-Chancellors and other delegates at the UGC-sponsored round-table meet on "University Management" in Mysore recently. She said the UGC had been getting less funds with the result that it could no longer meet its commitments to the universities.

Initially, while the Government accounted for only 57 per cent of the total income of these institutions, it had gone up to 81.5 per cent in 1983-84. On the other hand, funds for education by local bodies had gone down from 10.9 per cent to 5.6 per cent. The share of fees had also declined from 20.4 per cent to 7.5 per cent and the share of endowments and other sources had decreased from 11.6 per cent to 3.8 per cent. This indicated that the educational system heavily depended on the Government funds and had failed in resource mobilisation, therefore compromising its own autonomy.

Given such a scenario, the UGC had realised that the method of computing the quantum had never been worked out, resulting in computing the grant in an ad hoc manner.

The process of working out a formula had been initiated by the UGC based on the recommendations of the Punneya Committee. The brunt of work had been taken by the Association of Indian Universities (AIU). The aim was to work out unit costs which reflect the basic requirements of recurring expenditure of universities — Central, State and Deemed.

On enabling institutions to raise their own resources, the UGC Chairperson said while the funding requirement for day-to-day maintenance and salary would have to remain with the Government — Central or State — as recommended by the Punneya Committee and accepted by the UGC, there were many things which educational institutions wanted to do and for which they required cess.

She conceded that many universities and institutions wanted to mobilise resources, but had not been given the time to do so. She felt that the universities should mobilise resources from business houses, philanthropists and the alumni.

Dr Desai said the atmosphere could be created if both the quality and the relevance of education was improved and education made more responsive to the needs of the industry and the community.

She said the expansion of higher education in India had been poorly planned and had remained erratic. As many as 40 per cent of affiliated colleges in the country were not eligible for UGC assistance as they did not fulfil the

minimum conditions for infra-structural facilities.

The enrolment of students had grown at an exponential rate, particularly during the last decade, against a marginal increase in the strength of teachers.

"The obvious consequence has been a general decline in the academic standards," she said.

The UGC Chairperson said a second disturbing feature had been the proliferation of universities and colleges, especially for general education, which do not prepare students for a career.

Attention should be given to the syllabi at the undergraduate level to develop vocational skills.

"We need to bring in a revolution in science education through such application oriented subject matter with similar efforts in humanities and social sciences," she said.

Dr Desai said with the National Eligibility Test (NET) coming in for criticism, the Commission was reviewing the test with a view to improving it.

Referring to the distance education, Dr Desai hoped the traditional correspondence course would also begin shifting to the distance mode and would be administered by the IGNOU and not by the UGC by 1997.

Open Learning in Entrepreneurship

The National Science and Technology Entrepreneurship Development Board (NSTEDB) of the Department of Science and Tech-

nology, is reported to have launched a pilot scheme — "open learning in entrepreneurship development training programme" — in Karnataka, Maharashtra and Gujarat.

Over 200 persons have been given training to run this programme which is similar to the correspondence/distance education programme, the thrust being that the entrepreneur development training for S & T unemployed diploma holders and graduates would be given through the local language. This was revealed by Dr. P.K.B. Menon, Director, Department of Science and Technology while speaking at the Regional Engineering College in Tiruchi recently.

Dr Menon said the success rate of the EDP, organised by the DST through engineering colleges was computed at around 25 per cent, which meant that if 100 S & T personnel attended the EDP course, only 25 emerged as entrepreneurs owning their own production units. The dropout rate was as high as 75 per cent. In a decade, they would be able to produce just 5,000 entrepreneurs throughout the country. Hence the Department of Science and Technology launched the programme so that more persons could be benefited by the training given in their local language.

Effective screening of the applicants was being done in these three States, so that only those interested in the programme would be chosen. The training period would be 11 months. Course materials were being prepared in the three States. After a year, the performance of the programme would be evaluated and if it was found to be successful, it might be extended to other States, said Dr. Menon.

The NSTEDB would bring out a quarterly publication which would provide profiles of the industrial potential of the areas, the economic and fiscal policies of the Governments and the banks changing from time to time, export potential, institutions offering credit facilities, etc. This publication, Dr. Menon hoped, would go a long way in providing details for any budding entrepreneur.

The NSTEDB has also decided to tie up with R & D institutions in the country. For example, there were two R&D institutions of national significance, one the Plasma Institute in Ahmedabad and the Medical Instrumentation Institute in Chandigarh. If these institutions could be tied up, the product mix and findings could be transformed into commercial products by the entrepreneurs completing the EDP programme.

The NSTEDB had so far launched 12 science and technology entrepreneurs parks (STEP) and among them, four were functional. They were the BIT STEP in Ranchi, TREC-STEP, Tiruchi, Sree Jayachamarajendra College of Engineering STEP in Mysore and the Jawaharlal Nehru Entrepreneurs Chemical Park in Bombay.

Of the 12, TREC-STEP in the REC Tiruchi complex was the best performing STEP in entrepreneurship development, employment generation, revenue generation and other industrial promotion activities. For the low percentage — 25 of the success of the EDPs in the country, Dr. Menon said a critical evaluation showed that the licensing policies, clearances galore and the lending policies of the banks were the major impediments. The single window licensing policy was only on paper, Dr. Menon said.

Changing Aspect of Family

The Department of Education, Nagaland University, Kohima recently organized a one-day seminar on the theme "Changing Aspects of Family in Nagaland". Sponsored by North East Regional Centre, ICSSR, Shillong, the seminar was inaugurated by Mr S.K. Sarkar, IAS (Retd), Chairman, Nagaland Public Service Commission, Kohima while Dr. (Mrs) P. Kilemsungla Ao, Principal, DIET, Kohima presided.

The objectives of the seminar were : (i) to know the distinctive aspects of family system in Naga Society; (ii) to identify the new roles of members of family; (iii) to identify new roles of family towards education of children at home and other groups in society; and (iv) to study the changing trends of Naga family and its related issues and problems.

The focus of discussion at the seminar was on (a) Identification of factors responsible for change in traditional family structure of Naga Society; (b) Emerging pattern of family and its corresponding implications; (c) Changing roles of the members of family in new perspective; (d) Changing roles of family for rehabilitation of victims of drug abuse and addiction, elders and women; and (e) Effects of migration/mobility/influx of people from other states/neighbouring countries on Naga family structure.

Mr Sarkar in his inaugural address stressed that the theme of the seminar was very crucial for Naga society in today's contemporary society. He articulated the idea that the economic development of the people was more important than the economic development of a state or a Nation. For this, family had a major role to play because it

was the family where human resource was developed, he added. Dr. (Mrs) Kilemsungla, remarked that a lot of change was taking place in Naga family and it was the effect of educational development in the state.

In the first working session, chaired by Dr. K.K Sharma, Prof & Head, Deptt. of Education, Nagaland University, Kohima, a paper entitled "The present Scenario of Naga Family" was presented that generated many issues in the context of global economy and local cultural ethos. Summing up the discussion that four things were necessary to develop the quality of life in Naga children. These were (1) Quality Education, (2) Contentment in fastly changing materialistic society, (3) Family life education both for father and mother, and (4) Setting of higher ideals and values of life.

In the second session, chaired by Dr. P.K. Gupta, the papers presented included (i) Role of Elders and women for rehabilitation of drug addicts in changing family life; (ii) Social changes and family in Nagaland : Some Interdisciplinary Issues; and (iii) Unstable State of Social Dynamism.

Dr. Gupta, while concluding the discussion, pointed out three factors which affected the changes in Naga family. These were (i) Rate & level of development; (ii) Process of acculturation; and (iii) Philosophy of life of the Nagas.

Mrs. Neidono, President, Naga Mothers Association, in her valedictory address, stressed upon the maintenance of quality of Naga family in the context of process of change. She drew the attention of the delegates towards the heavy responsibilities of women as wife, mother and a copartner in the pro-

cess of economic activity. "Woman is the foundation stone of Naga society", she said.

Prof. K.K. Sharma, in his concluding remarks, stressed on the preservation of human virtues which had been in practice in Naga family. With the advancement of science and technology and high aspirations of the Nagas, distinctive values of Naga society like respect for human dignity, honesty, cooperation, sincerity, unity of purpose, regard for elders and so on, should not get eroded with the winds of materialistic development, he opined. There was need to preserve and protect Naga identity in terms of human dignity, excellence and emancipation as part of global human culture and ethos, he said. There was also a need to have collective introspection and to evolve a philosophy of life in the context of contemporary world for social action. For this, family was the nodal centre in Naga society, he felt.

Study in Russia

An official delegation of the Union Ministry of Human Resource Development, with representatives from the Association of Indian Universities (AIU), All India Council for Technical Education (AICTE), Educational Consultants India Limited (EdCIL), Medical Council of India (MCI) visited the universities and higher educational institutions in Russian Federation. The team members acquainted themselves with the pattern of higher education in the Russian Federation to facilitate establishing the equivalence of their degrees/diplomas and to operationalise the agreement between Indian and Russian Governments.

As a result of the report of the delegation, the AIU shall continue

to recognise the 'Diplom Engineer', 'Masters degree', 'Candidate of Science' and 'Doctor of Science' degrees with the corresponding awards of Indian universities for purposes of admission to higher courses and for employment in central services as per Govt. of India notification.

Study in Russia is now secured by agreement between Indian and Russian Governments and all agreements with private agents in Russia and India have been cancelled by State Committee for Higher Education of the Russian Federation/Russian Govt. Educational Consultants India Ltd. have been designated to select students for engineering, medical and other courses. EdCIL have advertised the procedure of admission in 1995-96 in recognised leading institutions in or near Moscow and St Petersburg. Admission will be finalised by EdCIL on merit/test/interview.

Students interested in admission may obtain additional information on Russian higher educational institutions or universities in India and other countries from the SIS Unit of the AIU or on telephone Nos. 3313390/3312429/or Fax 011-3315105

Cambridge Nehru Scholarships

The Nehru Trust for Cambridge University has awarded Cambridge Nehru Scholarships to eight students for pursuing a course of research at Cambridge University for October 1995 session. These are: M. Murthy of Tata Institute of Fundamental Research, Bombay, for Plant Science, S. Satyanarayana of Centre for Development Studies, Thiruvananthapuram, for Economics, N Chandra Shekhar of IIT, Madras, for Material Sciences and Metallurgy, P. Sharma of Banaras Hindu

University for Physics, Inderpal Singh of PAU, Ludhiana, for Clinical Veterinary Medicine, S.B. Singh of IISc Bangalore, for Material Sciences and Metallurgy, N. Srinivas of IIT, Kanpur, for Engineering and P. Dwivedi of Banaras Hindu University, Varanasi, for Plants Sciences.

In addition, S. Roy of Calcutta University for History and M. Warriar of Delhi University for Social Anthropology have been awarded Jawaharlal Nehru Fund Scholarship for pursuing a course of research at Cambridge University.

International Geological Congress

A short course and a workshop are proposed to be convened during the 30th International Geological Congress to be held at Beijing, China from 4-14 August, 1996 by the faculty members of the Department of Geology, Mohanlal Sukhadia University, Udaipur.

In short course on "Procedure and application of granulometric analysis of ore minerals" specialists will summarize the state of knowledge in areas of scientific and technological interest in an instructional format. Short Courses are commonly attended by those who either find the specialized information useful in their own work or wish to broaden their general knowledge.

The one-day Workshop on "Fluoride in water sources and human health" will provide an opportunity to share the ideas and research results, related to source and magnitude of fluoride concentration and contamination, effects of fluoride on human health, types of fluorosis, techniques of defluoridation, etc. The goal of the workshop is to stress the severity of the

geoenvironmental and health issues related with the fluoride polluted groundwater and surface water.

Further details about the short course and the workshop may be had from the Convenor, Scientific Programme Committee, 30th International Geological Congress, P.O. Box 823, Beijing 100037, P.R. China.

XXXVII Labour Economics Conference

The 37th Annual Conference of the Indian Society of Labour Economics (ISLE) will be held during December 22-24, 1995 at Pondicherry under the auspices of the Department of Economics, Pondicherry University. Professor Sheila Bhalla of the Centre for Economics Studies and Planning, Jawaharlal Nehru University, New Delhi will

preside over the Conference. The topics proposed to be discussed at the Conference include (1) Structural Adjustment, Labour Market and Poverty; (2) Employment in the Service Sector, and (3) Organising the Unorganised Workers.

Further details about the Conference themes and guidelines for paper contributors may be obtained from Hon. Secretary, Indian Society of Labour Economics, c/o Institute of Applied Manpower Research, I.P. Estate, Ring Road, New Delhi - 110002.

We Congratulate

Professor Dilip Kumar Sinha who has been appointed Vice-Chancellor of Visva-Bharati, Santiniketan.

News From Agricultural Universities

Strategy for Technology Transfer

Chaudhary Charan Singh Haryana Agricultural University (CCSHAU) has chalked out a strategy for transfer of latest technology till 2000 A.D. with a view to meet the future challenges of agricultural production and dealing with the problems of deteriorating soil health, water scarcity and environment degradation. This was disclosed by the Vice-Chancellor, Dr. S. Arya in Hisar recently.

Dr. Arya said that though Haryana State had made an impressive progress in increasing production and productivity in agriculture during the last two decades, the intensive use of agro-chemicals and over-exploitation of water resources had created several new problems that might pose threat to

future foodgrain production targets of the State. He said that the cropping sequences like rice-wheat, sugarcane-wheat, cotton-wheat, bajra-wheat, etc. which were being widely adopted in the state had caused rapid decline in ground water table and soil fertility in the eastern districts of the state. Similarly, underground brackish water and scarcity of good quality irrigation water in the western part had hampered the production of various crops. The use of agro-chemicals to contain various plant diseases, insect-pests and weeds had polluted the environment in a big way. He said that unless the farmers were trained at this stage, situation would become irretrievable. Keeping these challenges in view a workable plan to transfer

cost effective and environment friendly technologies to the farmers had been underlined. He said in the recent past the scientists of the University had succeeded in evolving technologies for effective water management under both irrigated and dryland conditions, insect and weed management with minimum use of chemicals, restoring soil fertility, inducing lactation in dry animals and getting more milk with complete feed blocks evolved by the University experts. But these technologies could not yet make a visible impact. However, under the present drive, emphasis would be on diminishing the technological gap and promoting all-round development of rural households, said Dr. Arya. As a part of this strategy, the University had decided to celebrate current year as Agricultural Extension Year. Starting from July 1, the Agricultural Extension Year would witness a marked increase in the transfer of technology programmes. He said the areas had been identified that needed priority attention for technology transfer campaign. Since with the opening of world market, the demand for diversified agriculture and animal products had gone up, training in agro-business, export-oriented technologies, income generating enterprises, post-harvest technology, etc would also be imparted to the farmers as well as agro-industries personnel, he said.

During the current year, all Krishi Gyan Kendras, Krishi Vigyan Kendras and Regional Research Stations as well as all the departments of constituent colleges of the University would adopt as much villages as possible in addition to their ongoing programmes of transfer of technology. A holistic approach of technology transfer of integrated farming systems would

be adopted. Keeping the available natural resources and agro-climatic conditions in view, stress would be laid on the promotion of suitable mixes of field crops, horticultural crops including vegetables, spices, floriculture, livestock, trees, sericulture, bee-keeping, mushroom cultivation, fisheries, etc. He said with this new concept all sections of farmers especially small, marginal and landless farmers who had limited access to the new technologies as well as rural women, who played an important role in agriculture and animal husbandry operations would be benefited. For farm women, emphasis would be to impart them training in income generating activities like weaving, knitting, tailoring, embroidery, etc. Emphasis would be laid on post-harvest technology, consumer rights, weaning and supplementary nutrition, low cost nutritious recipes, pre-school education of children, and rural sanitation.

Dr. Arya said the Single Window Service launched at the University recently to facilitate the farmers in getting their required inputs from one place would also be strengthened suitably. During this year, a separate building on the main campus would be constructed from where seeds of all crops, publications and advisory services would be ensured to the visiting farmers. The Vice-Chancellor also disclosed that to further facilitate the farmers in getting needed information and providing testing facilities for various plant and animal diseases, Polyclinics would be set up in each district at Krishi Gyan Kendra and Krishi Vigyan Kendra headquarters.

Soil Health Care Campaign

The Department of Soil Science of Chaudhary Charan Singh Haryana Agricultural University

(CCSHAU) in a drive to educate the farmers of the state about deteriorating soil health recently launched a Soil Health Care Campaign in village Franci. It was inaugurated by the Director of Research, Dr. V.P. Singh.

Addressing the farmers, Dr. Singh focused their attention on the degrading soil health that was taking place due to intensive cropping, imbalanced use of fertilizers and manures as well as excessive use of underground brackish water for irrigation. He called upon the farmers to get their soils and irrigation water periodically tested so that timely measures could be followed to keep the soil health in good condition.

Dr. D.P. Singh, Director of Extension education, who presided, stressed the need for developing strong linkage among scientists, field functionaries and farmers for meaningful transfer of technology.

On this occasion, lectures were delivered on the safe use of sodic and brackish waters, importance of different fertilizers and their use, soil and water sample testing and cropping systems. The scientists on the basis of soil texture of the village advocated the use of single super phosphate to mitigate sulphur deficiency. They emphasised the increased application of compost and green manure along with chemical fertilizers.

In the week long campaign, organised in collaboration with KRIBHCO, one hundred farming families of the village were adopted for imparting knowledge on integrated and balanced use of fertilizers, collection of soil and water samples for laboratory analysis, safe use of sodic and brackish waters, etc.

Countrywide Classroom Programme

Between 16th July to 31st July, 1995, the following schedule of telecast on higher education through INSAT-ID under the auspices of the University Grants Commission will be observed. The Programme is presented in two sets of one hour duration each every day from 6.00 a.m. to 7.00 a.m. and 1.00 p.m. to 2.00 p.m. The programme is available on the TV Network throughout the country.

1st Transmission

6.00 a.m. to 7.00 a.m.

16.7.95

"New Horizons - XXVI"
"Wooden Imprints : Block Printing"
"The Week Ahead"

18.7.95

"Question Time"
"The Butterfly Effect"
"Energy Flow - Part I"

20.7.95

"Flexible Manufacturing System"
"The Right to Choose : Ballot Power"
"Future Tense in English : A Pedagogic Perspective"

22.7.95

"Solar Cells for Space Applications"
"National Income : Concepts and Measurements"
"Chilli"

23.7.95

"A Touch of Profession : Cricket as a Profession"
"Photography in Journalism - A Mirror of Reality"
"Tobacco and Health"
"The Week Ahead"

25.7.95

"Made in Chicago"
"Optical Detectors"
"Energy Flow - Part II"

27.7.95

"Draft Processing - An Introduction"
"Soil Erosion"
"Post Colonial English Literature"

29.7.95

"Popular Statistics"
"The Visual Environment and Behaviour - Part I"
"Fresh from your Garden"

30.7.95

"Kathak"
"The Father of Hybrid Rice"
"The Week Ahead"

IInd Transmission

1.00 p.m. to 2.00 p.m.

16.7.95

No Telecast

17.7.95

"Question Time"
"Telephone Manners - II : Official Calls"
"Volcano"

18.7.95

"Understanding Hydrocarbons"
"Prof. N.S. Bendre : The Teacher"
"Oxygen Radicals and Antioxidants - Part XI : Tobacco and Oxygen Radicals"

19.7.95

"ASTREE, L'espace Retrouve"
"Hridayakunj - The Soul of

Freedom Movement"

"Virus and Cells"

20.7.95

"Application of Information Technology Tools through Satellite - Part II"
"Making of a Newspaper - Part VII : Printing"
"Semiotic Approach to Musical Aesthetics"

21.7.95

"Krein - Milman Theorem"
"Education for Equality - I"

22.7.95

"Ikebana"
"The Gift of Desert"
"The Week Ahead"

23.7.95

No Telecast

24.7.95

"Oscillation - Explanation and Definition"
"Heuristics : An Introduction to Heuristics"
"With Reference to"

25.7.95

"A Voyage in Science"
"Legal Literacy in South Africa"
"Oxygen Radicals and Antioxidants - Part XII : Antioxidants in Food"

26.7.95

"515.3"
"Alampur through the Ages : Part I"
"Mycotoxins"

27.7.95

"Shallow Deccan Basaltic Aquifer"
"Making of a Newspaper - Part VIII : Circulation and Advertising"
"Semiotic Approach to Musical Aesthetics"

28.7.95

"Origin of Universe"

"Education for Equality - II"

29.7.95

"Watchout What You Eat"

"Career Counselling : Engineering"

"The Week Ahead"

30.7.95

No Telecast

31.7.95

"Oscillation - Amplitude Response as a Function of Frequency"

"Heuristics in Business Management"

"Mother Dairy - The Fountain of Growth"

Hindi Telecast

प्रातः 6.00 से 6.30 बजे तक

17.7.95

"गांधी : तब और अब"

19.7.95

"उच्च शिक्षा के महत्वपूर्ण लक्षण : कालेज चुनाव"

21.7.95

"उच्च शिक्षा के महत्वपूर्ण लक्षण : मूल्यांकन विधि"

24.7.95

"मालवा के सिक्के"

"आपका स्वास्थ्य आपके हाथों में - भाग 1"

26.7.95

"आपका स्वास्थ्य आपके हाथों में - भाग 2"

"पैसे का विकास"

28.7.95

"आपका स्वास्थ्य आपके हाथों में - भाग 3"

"सूफी संत मलिक मुहम्मद जायसी - भाग 1"

"व्यक्तित्व एवं कृतित्व"

31.7.95

"तुलसी जन्मस्थली की खोज"

"ध्वनि प्रदूषण"

Activities**1. Information handling**

APHRIC will collect and distribute the following information :

- basic international human rights documents : human rights legislation, case law and information on human rights issues in the region.
- information on social, economic and cultural conditions throughout the region.
- human rights education materials including audio-visual materials and the creation of an information exchange on human rights education initiatives worldwide.

2. Research

APHRIC will conduct research on a range of human rights issues in the region in collaboration with experts in Japan and in the region as a whole. The research may include themes such as :

- vulnerable people, such as indigenous peoples, minorities, refugees and migrant workers.
- discrimination based on social status.
- development and human rights.

3. Education and training

- APHRIC will promote human rights education for both citizens and corporations.
- Organization of human rights courses for those who are working for human rights in the Asia-Pacific region is also envisaged.

4. Consultancy

Consultancy services will be provided on human rights issues. This includes a referral service to other source of information, for example introductions to similarly concerned organizations.

News from Abroad

Asia-Pacific Human Rights Information Centre

The Asia-Pacific Human Rights Information Center (APHRIC) launched on 1st August, 1994 started its operation on 7th December, 1994 at Minato-ku, Osaka, Japan.

Goals

1. To promote human rights in the Asia-Pacific region and to realize the spirit of international human rights instruments such as the Universal Declaration of Human Rights in the Asia-Pacific region;
2. To convey and reflect Asia-Pacific perspectives on human rights based on different cul-

tural, social and economic conditions to the international community;

3. To ensure that human rights principles are included in Japanese economic and other activities in the Asia-Pacific region and to work for the inclusion of human rights considerations in Japanese business and other private activities abroad and also in official development aid policies; and
4. To rise human rights awareness among the Japanese and increase their understanding and acceptance of different cultures and different people.

A PROVOCATIVE BOOK

E.S.R. Gopal*

Peter Graneau and Neal Graneau. NEWTON versus EINSTEIN : How matter interacts with matter. New Delhi, Affiliated East West Press, 1995. ISBN 81-85938-33-4. Pp. 220. Rs. 95.00.

The names of two all-time great scientists and a catchy byline in the title, attracting scientists as well as philosophers and laymen, are the first impressions of this provocative book. It contains serious thoughts, but couched in a readable style and developed with a historical perspective. It argues with missionary zeal for new developments and understanding, but a judgement on the scientific questions must await serious advanced research.

The early ideas of interaction between material particles culminated in Newton's formulation of the laws of motion and of the inverse square law of gravitational interaction. Lo and behold ! Not only the objects on the Earth but even celestial objects like the sun, the moon, the planets mercury, mars, jupiter and so on fell into a pattern of logical understanding. It was a cultural renaissance as much as a scientific revolution. The Newtonian theory of gravitation implied that the mutual interaction between two bodies is instantaneously felt by them without the in-

tervention of any medium in between — the principle of action-at-a-distance. For about two hundred years after Newton's discovery of the law of gravitation, the action-at-a-distance principle was unquestionably leading to several successes in mechanics, astronomy and other fields.

Around the middle of the last century, the exploration of electricity, magnetism and electromagnetism started and culminated with the electromagnetic field equations of Maxwell. Optical signals were identified as electromagnetic waves of very high frequencies. Energy was transported with the speed of light C as an electromagnetic field originating from the source and reaching the receiver. The success of Maxwell's equations in synthesising the earlier observations and in predicting new phenomena overshadowed the earlier works of Ampere, Faraday, Neumann, Gauss, Weber and others. For a while the field ideas appeared special to electromagnetism, until Einstein developed the General Theory of Relativity and Gravitation in 1915. He showed that gravitational energy also propagated as waves with the speed of light C as a complex space-time curvature. The theory had profound success in explaining all the earlier observations

and in predicting new post-Newtonian effects which have been verified later, the most recent observations by Taylor and Hulse being connected with the orbital parameters of the binary pulsars.

Thus scientists, especially physicists who study these matters in considerable detail, now do not subscribe to the action-at-distance concept of instantaneous transmission of signals with infinite speed between the interacting particles. Instead they accept the field description of energy or signals propagating with a speed C . The special theory of relativity, developed by Einstein earlier in 1905, had pointed out C to be the maximum speed approachable by any material particle. The many successes of the special theory of relativity, with its equivalence of mass and energy spectacularly demonstrated even to the layman through the nuclear BOMB, leave no room for doubting the correctness and consistency of the framework. This earlier 1905 work of Einstein had actually brought together electromagnetism and its field concepts with the general principles of mechanics.

It is this citadel of field interaction which is sought to be overthrown by the authors in this book. The authors, both professional physicists, start by reviewing in Chapter I, the Greek Aristotle's explanation of contact action as the mechanism for transmitting motion or signals from the particle to another. This philosophic idea, with various refinements, was enough to explain the physical world until Newton discovered the law of gravitation which governed not

*Director, National Physical Laboratory, New Delhi & earlier Professor of Physics, Indian Institute of Science, Bangalore.

only a terrestrial phenomenon of an apple falling to earth but also the celestial phenomena of the moon going round the earth or the earth revolving round the sun. There was obviously no possibility of applying physical contact action in these celestial cases. So one had to accept the additional idea of action-at-a-distance or far-action, as clearly brought out in Chapter II. Material objects at a terrestrial level appear to interact through contact action as was conceived by Aristotle. The magnificent achievement of Newtonian mechanics, which is almost all of mechanical and civil engineering not to speak of the phenomena of the common physical world, earned this tribute that Newton's "clear and wide ideas will far ever retain their significance as the foundation on which our modern concepts of physics have to be built" from Einstein, another of the Giants of the system. Chapter III deals with the worries concerning the concepts of inertia, namely, why bodies do not move unless forces act on them, including the suggestion of Mach and others. While the authors express concern about the concept, most practising scientists will accept "inertia" as a fact of nature, namely a particle has a mass or an electron has a charge. They would regard as metaphysical speculation to ask why the mass or why the charge. The very great scientists, the Newtons and Einsteins, will perhaps add that science is a never ending quest and that perhaps at some future date some future theory may answer such questions, if they are considered legitimate questions.

After these three chapters of historical review, including the contributions from natural philosophers like Galileo, Descartes, Kant and others and critical observers

like Copernicus, Kepler, Volta, Oersted and others, the authors move to the development of electromagnetism in Chapter IV, electrodynamics of material bodies in Chapter V, and aspects of quantum mechanics in Chapter VI. Among these the speculations on quantum mechanics would not appeal to practising physicists, who have seen many other savants getting lost in wilderness in trying to go beyond the experimental observations, as in the case of inertia mentioned earlier. In modern science,

only experimentally observable quantities can play a role and there is no room for metaphysical speculations of unobservable causes.

In chapter IV, the authors give a lucid account of the development of electromagnetism over the last two centuries. The work of Ampere is specially highlighted, though the inverse square law of force between two current elements attributed to Ampere by the authors is often attributed to Biot and Savart by many others. The chapter ends

INDIAN COUNCIL OF MEDICAL RESEARCH

(Advt. No. 5 & 6/95/ICMR Hqrs. Office)

Applications are invited upto 31.7.1995 for the following posts in the Human Resource Development Research Division in the Hqrs. of the Council, New Delhi. These posts under ICMR Research Cadre are transferable.

ADVT 5/95 (I) ASSISTANT DIRECTOR GENERAL (Medical) in the scale of pay of Rs. 3700-125-4700-150-5000.

Qualification and Experience : Essential : (a) MBBS (b) 12 years research/teaching experience in Obstetrics and Gynaecology. OR MD in Obstetrics and Gynaecology with 10 Yrs Research/Teaching experience. (c) Experience in research work as evidenced by publications. **Desirable :** Participation/experience in conducting multicentric clinical/operational research studies in the fields of family planning and maternal and child health. **Job Description :** The incumbent will be required to assist in planning/coordinating and conducting multicentric research studies activities in the field of reproductive health with emphasis on family planning as also Maternal & Child Health.

ADVT-6/95 (II) RESEARCH OFFICER (MEDICAL) in the scale of pay of Rs. 2200-75-2800-EB-100-4000.

Qualification and Experience : Essential : MBBS **Desirable :** 3 years research/teaching or experience in the fields of Family Planning or Maternal & Child Health or Reproductive tract infections. OR M.D. in Obstetrics & Gynaecology or Paediatrics or Preventive & Social Medicine/Community Medicine. **Job Description:** The incumbents will be required to assist in planning/coordinating multicentric research studies activities in the field of reproductive health with emphasis on Family Planning and Maternal & Child Health.

Pensionary benefits are admissible as per Govt. rules in force. Private practice is not allowed. Non-practising allowance as per rules in force is admissible to medical graduates only. Application form can be obtained from the office of the Director General, Indian Council of Medical Research, Ansari Nagar, Post Box 4911, New Delhi-29. Application duly completed should be sent to the Director General, ICMR alongwith a crossed postal order for Rs 8/- drawn in favour of Director General, ICMR payable in New Delhi. SC/ST candidates are exempted from payment of this amount. Application without postal order and/or incomplete applications and applications received after the closing date will not be entertained. The Advt. No and name of the post applied for must be indicated on the top of the application form. Candidates called for personal discussion for the post of Assistant Director General will be paid 1st class Rail fare and candidates for the post of Research Officer will be paid 1st class Rail fare by shortest route. No TA/DA is admissible for joining the post or on termination of appointment. Applications from the employees working under the Central/State Govt./Semi Govt. and Govt. controlled undertakings should be sent through their employer and should be received before the closing date alongwith the certificate of the employer that the applicant will be relieved within three months of his/her receipt of appointment orders. Advance copies will be considered subject to the condition that a 'No Objection Certificate' from the employer is produced at the time of personal discussion. Candidates called for personal discussion have the option to answer in Hindi also. The council reserved the right to short-list the applicants to be called for personal discussion.

Any canvassing by or on behalf of the candidates or bringing political or other outside influence with regard to the selection/recruitment shall be considered as DISQUALIFICATION.

with a description of what is called "Rail Gun", a mechanism for propelling objects at high speed using electromagnetic induction. This electric catapult had been known for many years but shot into prominence in the "Star Wars" programme as a possible method of launching objects at very high speeds. The authors claim that conventional Maxwell's equations based theory does not explain all the features of the device but that the Ampere-Neumann theory, based on far-action principles, is able to explain the system.

In chapter V the authors discuss the electrodynamics when material bodies are involved. They cite half a dozen experiments, by themselves and by others, which are not apparently explainable by the conventional Maxwell-Lorentz electromagnetic equations and which reveal in particular the Ampere longitudinal force. These are actual experimental observations about which doubts can be dispelled because they can be repeated and checked. It is the interpretation of the results which causes concern. Peter and Neal Graneau claim that

the field theory is over-thrown and that one must accept the elements of the action-at-distance principle. Most other physicists hold the view that it is a storm in a tea cup and that such grand visions are not involved. They feel that an explanation for these experiments will soon be found, may be even within the framework of conventional wisdom or the extensions of the current theories in appropriate directions of say electromigration effects. When a matter is *sub judice* it is inappropriate to discuss the verdict.

Should the book therefore be kept aside, to be taken up only when the dust has settled down over the controversy? Should it be taken with a pinch of salt as the views of persons who have an inflated opinion about themselves? Or, should it be criticised as the work of disillusioned scientists who feel ignored by the community? None of these would be appropriate. It is worth recalling that science progresses only by debates on all sides of the studies and by even controversies governing new ideas as yet unverified or unre-

futed. The book should be seen as an attempt to attract attention to an unsolved problem which may have wider implications. Careful experiments are involved as also quite subtle theoretical modelling and calculations. Posterity will surely not allow the question to remain unanswered.

Thus in an overall way the authors should be congratulated for writing a provocative book, yet without offending anyone. It is also a remarkable feat that they have been able to explain the subject without an array of mathematical equations. The historical account is quite readable, though scholarly scrutiny may correct a few slips or errors. It is recommended to professional physicists to ponder over the technical questions raised regarding the longitudinal Ampere forces. It is recommended to all others as a good survey of how ideas of forces and interactions among physical bodies have evolved over the last two thousand years and of how questions are continuing to be asked. Science is not closed and static, it is open and all the time evolving.

CALENDAR OF EVENTS

Proposed Dates of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/ Officer to be contacted
Sept 11-20, 1995	Training Programme in Computer Application in Social Sciences	To orient the social science researchers to fundamental of computer, computer data processing, quantification method and use of SPSS	Centre for Social Studies, Surat	Vimal Trivedi, Course Director, Centre for Social Studies, South Gujarat University Campus, Udhna Magadalla Road, Surat-395 007
Dec 20-22, 1995	International Conference on Advances in Mechanical Engineering	To take stock of recent developments and envision future trends in the field of Mechanical Engineering	Indian Institute of Science, Bangalore	Dr. T.S. Mruthyunjaya, Convenor, ICAME, Department of Mechanical Engineering, IISc, Bangalore-560012

RESEARCH IN PROGRESS

A list of research scholars registered for doctoral degrees in Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Nair, Leena O. A study of some problems in graph theory relating to domination theory. Kerala. Dr M I Jinnah, Reader, Department of Mathematics, University of Kerala, Thiruvananthapuram.

Physics

1. Gopakumar, G. Studies on the structure of the solar corona. Kerala. Dr T E Girish, Department of Physics, University College, Thiruvananthapuram.

2. Jayasree, V. Ionospheric response to geomagnetic storm: A global study. Kerala. Dr B Jayachandran, Department of Physics, S N College, Kollam.

3. Mathew, Abin P. Inference and prediction of solar terrestrial conditions. Kerala. Dr T E Girish, Department of Physics, University College, Thiruvananthapuram.

4. Pereira, B Felix. Investigations on the orientation of the interplanetary magnetic field. Kerala. Dr T E Girish, Department of Physics, University College, Thiruvananthapuram.

5. Satheesh, S K. Characteristics of atmospheric aerosoles. Kerala. Dr B V Krishnamurthy, Space Physics Laboratory, Vikram Sarabhai Space Centre, Thiruvananthapuram.

Chemistry

1. Abraham, Beena T. Studies on metal ions binding in the ternary systems - Evaluation of thermodynamic functions. Kerala. Dr T S Anirudhan, Senior Lecturer, Department of Chemistry, University of Kerala, Kariavattom.

2. Anand, Shalu. Synthesis of some juvenile hormone like substances containing additional hetero atoms. HP. Dr R K Mahajan, 37 Jatogh View, Summer-Hill, Shimla.

3. Anil Kumar. A study of thermodynamic and transport processes of some alkaline earth metal halides in binary aqueous solutions of sucrose and urea. HP. Dr M L Parmar, Department of Chemistry, Himachal Pradesh University, Shimla.

4. Gupta, Anupam. Radiation induced graft copolymerization of vinyl monomers onto polyethylene film. HP. Dr Inderjeet Kaur, Department of Chemistry, Himachal Pradesh University, Shimla.

5. Gupta, Neerupma. Designing of polymeric reagents for organic synthesis through grafting of cross-linked resins. HP. Dr C S Pande, Department of Chemistry, Himachal Pradesh University, Shimla.

6. John, Valsamma. Modification of polyamide film by radiation induced graft copolymerization method. HP. Dr B N Mishra, Department of Chemistry, Himachal Pradesh University, Shimla.

7. Kalia, Narinder Kumar. Phytochemical studies of some economically useful plants of Himachal Pradesh. HP. Dr C S Pande, Department of Chemistry, Himachal Pradesh University, Shimla.

8. Sharma, Vipin. Synthesis and characterization of tin

(iv) and organotin (iv) complexes of some hydroxamic acids. HP. Dr (Mrs) Neeraj Sharma, Department of Chemistry, Himachal Pradesh University, Shimla.

9. Singh, Shyam. Studies in membrane transport of some electrolytic solutions under the magnetic field. HP. Dr R L Blokhra, Department of Chemistry, Himachal Pradesh University, Shimla.

10. Thakur, Ajay. Modification of natural and synthetic polymers by graft copolymerization. HP. Dr B N Misra, Department of Chemistry, Himachal Pradesh University, Shimla.

Earth Sciences

1. Rajeev, S. A study on ground water resources : Evaluation and environmental hazards of the Tawa command area (M.P.) using remote sensing techniques. H S Gour. Dr L P Chourasia, Department of Applied Geology, Dr H S Gour Vishwavidyalaya, Sagar.

2. Saji Kumar, S. Micro level land and water resources studies for sustainable land use development : A case of Vamanapuram River Basin, Kerala. Kerala. Dr Sri Kumar Chathopadhyay, Scientist, Centre for Earth Science Studies, Trivandrum.

Engineering

1. Saini, Randeep Singh. Studies on the respiratory exposure of workers to particulate matter in foundries. Panjab. Dr H M Dani, Prof, Department of Bio Chemistry, Panjab University, Chandigarh and Dr S K Goyal, Prof, Department of Civil Engineering, Panjab Engineering College, Chandigarh.

2. Sudhakar, D P. Investigations on diffusion aided vacuum brazing technique for cryogenic rocket engine combustion chambers. Kerala. Dr A E Muthunayagam, Director, L P S C, Valiamala, Trivandrum.

Technology

1. Srivastava, Anil. Synthesis and characterisation of metal filled conducting polyurethanes. Panjab. Dr Paramjit Singh, Prof, Department of Chemical Technology, Panjab University, Chandigarh.

BIOLOGICAL SCIENCES

Biochemistry

1. Jasbir Singh. Mechanism of ribosome-membrane interaction and its disruption by cardenogens. Panjab. Dr H M Dani and Dr Rajeshwar Sharma, Department of Biochemistry, Panjab University, Chandigarh.

2. Madhu Chhaya. Role of antioxidants in diabetes mellitus. Panjab. Dr D D Bansal and Dr S C Ojha, Department of Biochemistry, Panjab University, Chandigarh.

3. Ravi, Sheeba. Cyanide detoxification kinetics in cassava processing and the impact of processing on nutritional value. Kerala. Dr G Padmaja, Central Tuber Crops and Research Institute, Thiruvananthapuram.

4. Sharma, Sheel. Biochemical evaluation of lipid-lipoprotein, iron and oxidative stress status in relation to different

diets. Panjab. Dr Rajeshwar Sharma, Department of Biochemistry, Panjab University, Chandigarh.

5. Srinivas, G. Programmed cell death and the prognosis of paediatric acute lymphoblastic leukemia. Kerala. Dr M Radhakrishna Pillai, Asstt Prof, Regional Cancer Centre, Medical College, Thiruvananthapuram, and Dr K Ramachandra Panicker, Aswathi, T.C. 3/1996, Sivamanglam Lane, Pattom, Thiruvananthapuram.

Botany

1. Jose P A. A study on the structure and dynamics of the populations of rare and endemic trees of Western Ghats of Kerala State. Kerala. Dr A G Pandurangan, Tropical Botanic Garden and Research Institute, Palode.

2. Pradeep, C K. Biodiversity of the mushroom flora of Agasthyamala Hills. Kerala. Dr T K Abraham, Tropical Botanic Garden and Research Institute, Palode.

3. Sakunthala, B. Ecology and taxonomy of the soil algae of the Qullon District of Kerala. Kerala. Dr M V Nadaraja Panicker, Department of Botany, S N College, Kollam.

4. Sandhya, P. *In vitro* mutagenesis of *Gynemna sylvestris*. Kerala. Dr G Vilasini, Department of Botany, M G College, Thiruvananthapuram.

5. Uma Jyothi, R L. Cytogenetic studies in colorectal adenomas and carcinomas. Kerala. Dr Ravindran Ankathil and Dr K T Shenoy, Regional Cancer Centre, Thiruvananthapuram.

6. Vrinda, S L. Cytological and epidermal studies on Sterculiaceae. Kerala. Dr M V Nadaraja Panicker, Department of Botany, S N College, Kollam.

Zoology

1. Bhadrar, Geetha. Heavy metal pollution in the Ashtamudy estuarine system. Kerala. Dr N Ramanujan, Department of Zoology, F M N College, Kollam.

2. George, Johnson. Dynamics of pesticides in aquatic organisms. Kerala. Dr A K Cicily Kutty, Department of Zoology, Mar Ivanios College, Thiruvananthapuram.

3. Gopal, Geetha. Preservatives and their effect on fish meat. Kerala. Dr A K Cicily Kutty, Department of Zoology, Mar Ivanios College, Thiruvananthapuram.

4. Jayachandran Nair, R K. Effects of pesticides on the reproductive physiology, endocrine profile and behavioural patterns of the Japanese quail, *Coturnix coturnix japonica*. Kerala. Dr K K Sreedevi Amma, Department of Zoology, M G College, Thiruvananthapuram.

5. Josheph, Susamma. Biology, ecology and control studies of mosquitoes in certain hilly parts of Kerala. Kerala. Dr K G Narayana Pillai, Department of Zoology, F M N College, Kollam.

6. Joshua, Elizabeth K. Effects of cassava and ipil leaves on the endocrine profile, reproductive activities and behavioural responses of Japanese quail, *Coturnix coturnix japonica*. Kerala. Dr K K Sreedevi Amma, Department of Zoology, M G College, Thiruvananthapuram.

7. Mini, D. Impact of plant products and biocides on endocrine function of fishes. Kerala. Dr M C Subash Peter, Department of Zoology, F M N College, Kollam.

8. Mukundan, T K. Biology of *Ambassis gymnocephalus*. Kerala. Dr P J Thomas, Department of Zoology, F M N College, Kollam.

9. Royee, M K P. An evaluation of the water quality of Kollam (Kerala) municipal area. Kerala. Dr V R Prakasam, Department of Zoology, F M N College, Kollam.

10. Somanathan Pillai, G. Hydrobiology, faunal composition and pollution problems of the selected retting grounds in the backwaters of Central Travancore. Kerala. Dr N Ramanujan, Department of Zoology, F M N College, Kollam.

THESES OF THE MONTH

A list of doctoral theses accepted by Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Bhatt, Anita. Bernstein polynomials and piecewise rational curve and surface representations. Durgavati. Dr H P Dikshit, Vice Chancellor, Himachal Pradesh University, Shimla and Dr A Ozha, Department of Mathematics, Rani Durgavati Vishwavidyalaya, Jabalpur.

2. Das, Kishore Kumar. Some aspects of discrete distributions. Gauhati. Dr S B Nandi, Prof and Head, Department of Statistics, Gauhati University, Guwahati.

3. Jha, Shishir Kumar. On the techniques of relative risk estimation with application in clinical and epidemiological data. Delhi.

4. Khan, Ayub. Chaos in non-linear planar oscillation of a satellite in elliptic orbit. Delhi.

5. Parashar, Sarla Devi. Some contributions of sequence spaces and related recent developments. Delhi.

6. Ramakrishna Prasad, A. Probabilistic, simulation and neural network models for the study of some multi-component systems. Krishnadevaraya. Prof K L Narasimha Rao, Department of Mathematics, Sri Krishnadevaraya University, Anantapur.

7. Sahdev, Shiv Kumar. A study of the modulus of quasidiagonality. Delhi.

8. Tiwari, Madhu. A study of generalized hypergeometric functions. Devi Ahilya. Dr C L Parihar and Dr C K Dave, Department of Mathematics, Holkar Science College, Indore.

Physics

1. Bhattacharyya, Satadal. Studies of few body systems by hyperspherical harmonics method with realistic potentials. Burdwan. Dr T K Das, Prof (Retd), Department of Physics, University of Burdwan, Burdwan.

2. Bora, Madhurjya Prosad. Stability of composite self-gravitating systems. Delhi.

3. Borthakur, Rajendra Prasad. **Fabrication and characteristics of MIS diodes and TFT's using rare earth oxides.** Dibrugarh. Dr B Baishya, Prof, Department of Physics, Dibrugarh University, Dibrugarh.
4. Chattopadhyay, Biplab. **Anisotropic 3D XY model and vortex loops: Layered 3D high T_c superconductors and 2D quantum capacitive Josephson junction arrays.** Hyderabad. Prof S R Shenoy.
5. Chaudhry, Anunay Kumar. **Nonlinear radial pulsation in self gravitating gaseous masses.** Delhi
6. Chaudhury, Koel. **Biophysical studies on the characteristics of macro-molecules in neurological disorders using spectroscopic techniques.** Delhi
7. Dixit, Sudhir Kumar. **A study on the resonators for high gain pulsed lasers.** Devi Ahilya. Dr Rajiv Bhatnagar, Scientific Officer, Centre for Advanced Technology, Indore.
8. Gupta, Anju. **Some studies of bound and scattering states of atoms.** Delhi.
9. Gupta, Vinay. **Structural, optical and dielectric studies on zinc oxide (Zn O) thin film.** Delhi.
10. Gupta, Vivek Kumar. **Structural studies of some organic compounds of medicinal importance by X-ray crystallographic techniques.** Jammu. Prof K N Goswami.
11. Indrani, A V. **Equilibrium and nonequilibrium dynamics of dense liquids.** IISc.
12. Jumuna Prasad. **Study of variation of viscosity of liquids as a function of temperature and pressure.** Kurukshetra.
13. Khani, Parviz Hossein. **Phase diagram studies in aggregated amphiphilic systems and structural transformations in (TTAB+pentanol)/water/N-octane system.** Delhi.
14. Kuraria, Rajendra Kumar. **Studies on the effect of dopants on the mechanoluminescence of irradiated (KBr) crystals.** Durgavati. Dr B P Chandra, Department of Physics, Rani Durgavati Vishwavidyalaya, Jabalpur.
15. Menon, Ravikrishna. **On the Einstein Podolsky - Rosen paradox.** Calicut. Dr V V Thankappan, Department of Physics, University of Calicut, Calicut.
16. Nayak, Saroj Kumar. **Dynamics and phase change in atomic and molecular clusters.** JNU. Prof R Ramaswamy.
17. Purkayastha, Biswajit. **Experimental investigation on the effect of high Z front layer on saturation thickness for radiation shielding materials.** Gauhati. Prof K M Pathak and Dr A K Sinha.
18. Saini, Krishan Kumar. **Superconductivity in thallium based high temperature ceramic superconductors: Effect of synthetic parameters and constituent elements.** Delhi.
19. Sambasiva Rao, M. **Experimental study of asymptotic critical behaviour in Ni-based 3D transition metal-metalloid amorphous alloys.** Hyderabad. Prof S N Kaul.
20. Sapra, Gulshan Kumar. **Studies on atomic scattering factors for anisotropic charge distribution in solids.** Delhi
21. Shah, Prasanna. **The study of high temperature superconductors and other related compounds.** Devi Ahilya. Dr

Ajay Gupta, Department of Physics, Devi Ahilya Vishwavidyalaya, Indore.

22. Talwar, Praveen. **Structural, electrical and piezoelectric studies on lanthanum modified lead titanate ferroelectric ceramics.** Delhi

23. Topare, Raghavendra Jagdish. **Physical properties of high T_c cuprate superconductors.** Marathwada. Dr S S Shah, Prof, Department of Physics, Dr Babasaheb Ambedkar Marathwada University, Aurangabad.

Chemistry

1. Arun Dutt, S V. **Synthesis of some novel fused perimidines.** Osmania. Prof C V Ghalapathi Rao, Department of Chemistry, Osmania University, Hyderabad.
2. Bhatnagar, Mamta. **Chromatographic analysis of organic compounds using charge-transfer complexation and fluorescence techniques.** Devi Ahilya. Dr S L Garg, Department of Chemistry, Govt Girls Postgraduate College, Indore.
3. Bheema Rao, Paraselli. **Annulation methods for the synthesis of alpha, beta unsaturated delta lactones: synthesis of (-) - Boschnialactone and (-) - goniothalenol.** Hyderabad. Dr Ashwini Nangia.
4. Bisht, Kirpal Singh. **Lipase mediated transesterifications and phytochemical investigations of Piper clarkii and Piper wightii.** Delhi.
5. Chhabra, Vishal. **Preparation and characterization of ultrafine magnetic oxide particles using microemulsion mediated systems.** Delhi.
6. Debroy, Mukti. **Studies on preparation characterisation and properties of natural and synthetic fibre reinforced lime, pozzolana cements and concretes.** Nagpur. Dr S S Dara, Department of Chemistry, Visweshwaraiya Regional College of Engineering, Nagpur.
7. Devinder Kumar. **Chemistry of some adaptogenic plants.** Jammu. Dr R S Kapil and Dr K K Bhutani.
8. Gaikwad, Maya Naresh. **Beneficiation characteristics of mixed sulphide ores of Nalanjkhand Copper Project, Balaghat District, Madhya Pradesh.** Nagpur. Dr M R Patil, Department of Chemistry, Institute of Science, Nagpur.
9. Garg, Jyoti. **Chemical studies of polymer coatings for steel.** Devi Ahilya. Dr M L Gangwal, Department of Chemistry, P M B Gujarati Science College, Indore.
10. Gaur, Diptivarna Singh. **The kinetic and mechanistic studies in micellar catalysed oxidative decarboxylation of some amino acids by potassium permanganate in moderately concentrated acidic media.** Vikram. Dr V R Shastri, Prof and Head, Department of Chemistry, Vikram University, Ujjain.
11. Ghosh, Alak Kumar. **Kinetics and mechanism of ligand substitution in octahedral rhodium (III) complex.** Burdwan. Dr G S De, Prof, Department of Chemistry, University of Burdwan, Burdwan.
12. Gogia, Amita. **Some novel synthetic and mechanistic pathways.** Delhi.
13. Hiremath, S C. **Kinetics and mechanism of some oxida-**

tion reactions. Karnatak. Dr J R Raju.

14. Hugar, Gangadhar Honnappa. A study of kinetics and mechanism of some oxidation reactions in alkaline media. Karnatak. Dr S T Nandibevoor, Department of Chemistry, Karnatak University, Dharwad.

15. Jagat Ram. Studies on the clay minerals and amorphous constituents of some salt affected soils of Haryana. Delhi.

16. Jain, Manasi. Synthetic studies of C-15 and C-17 compounds. Delhi.

17. Jain, Ratan Mani. Synthesis and solution conformational studies of peptides containing dehydroamino acids. Delhi.

18. Joshi, Deepika Milind. Polarographic and photometric studies of some medicinally important compounds. Nagpur. Dr A P Joshi, Department of Chemistry, Nagpur University, Nagpur.

19. Kale, Deepak. Study of transport of alkali and alkaline earth metal cations across liquid membrane using crown ethers. Vikram. Dr Uma Sharma.

20. Kashyap, Anil Kumar. Studies on ternary complexes of some transition elements with amino acids. Ravishankar. Dr Hemlata Mohabey, Principal, Govt KD Girls College, Rajnandgaon.

21. Khaliq, Md Abdul. Studies on the migration of chemical additives from finished plastics and their toxic effects. AMU. Dr Wajid Hussain Ansari.

22. Kishore, Polisetty Krishna. New pathways in Br (v) reduction by organic compounds and kinetic study of Br (v) - malonic acid direct reaction to highlight malonyl radical as second control intermediate in classic BZ reaction. Andhra.

23. Maurya, Ram Charitra. Studies on some mixed ligands nitrosyl complexes involving biologically active organic compounds. Durgavati.

24. Mimani, Tanu. Nickel plating for functional properties: Kinetics and thermodynamic aspects. Bangalore. Dr S M Mayanna, Department of Chemistry, Bangalore University, Bangalore.

25. Narsimha Reddy, C. Equilibrium studies on transition metal chelates of acid hydrazides. Osmania. Prof M Govind Ram Reddy, Department of Chemistry, Osmania University, Hyderabad.

26. Nema, Sudhir Kumar. Studies on physico-chemical and photoelectrochemical aspects of iron oxide particulate modified ionomer membranes. Durgavati.

27. Pradeep Kumar. Polymer supported synthesis and modification of oligonucleotides. Delhi.

28. Ray, Abhijit. Some metals and metal salts in organic synthesis. Delhi.

29. Sanjeev Kumar. Chemical transformations of sesquiterpene lactones and biological activity of the derived compounds. PAU.

30. Sarma, Chandana. A study of surface water and sedi-

ment pollution for a few entrapped water sources in and around Gauhati city. Gauhati. Dr K G Bhattacharya.

31. Shah, Shakeel Ahmad. Studies of metal chelates with multidentate ligands. AMU. Dr Sartaj Tabassum.

32. Siddhanta, Sukti. Study of adsorption of some organic ligands of granular activated carbon and their use as metal scavengers. Nagpur. Dr G S Natarajan, Department of Physical Chemistry, Laxminarain Institute of Technology, Nagpur.

33. Sreedhar, M. 3-methoxy-4-(2-hydroxy-3-methacryloxy-propoxy) benzaldehyde-acrylate copolymers: Synthesis and characterisation. Kakatiya. Prof N Satyanarayana, Department of Chemistry, Kakatiya University, Warangal.

34. Thakur, Naresh Kumar. Chemical studies on *Asparagus filicinus* Buch-Ham, *Agave veracruz* Mill and *Aloe vera* Linn from Himachal Pradesh. HP.

35. Varshney, Krishna Gopal. A study of the methods of characterisation of inorganic ion exchangers and their novel applications. D Sc AMU.

36. Venkateswara Rao, Gottumukkala. Steroid and terpenoid constituents of some soft coral species of *Sinularia* and *Lobophytum* genera of the Indian Ocean. Andhra.

Earth Sciences

1. Bhat, Ghulam-ud-Din. Investigations on depositional environments of permian carbonates exposed in and around Khrew, Kashmir. Jammu. Dr G M Bhat.

2. Khajuria, Chanchal Kumar. Biostratigraphy taxonomy and palaeoecology of the intra-and-intertrappean vertebrates of Rangareddy District, Andhra Pradesh. Jammu. Dr G V R Prasad and Dr B P Singh.

3. Nurul Hasan. Groundwater assessment and water quality status in parts of Yamuna River sub-basin of Aligarh-Mathura Districts, U P India. AMU. Dr Shadab Khurshid.

4. Raina, Avtar Krishan. Petrological study of volcanics in the parautochthonous zone between Tawi and Ravi Valleys, Jammu Himalaya. Jammu. Prof K L Munshi and Prof B L Dhar.

5. Roy, Minati. Petromineralogical study on the uranium mineralisation and its host rocks of the midproterozoic Vempalle formation in South-western part of the Cuddapah Basin, Andhra Pradesh, India. Bangalore. Dr R Dhana Raju, Department of Atomic Energy, Govt of India, Bangalore.

6. Sharma, Rattan Lal. Geohydrological investigations of the upper parts of Chenab-Ravi Doab. Jammu. Dr T R Sharma.

7. Singh, Keisham Rajen. Hydrogeomorphological studies in Imphal District. Manipur. Dr Arun Kumar, Department of Earth Sciences, Manipur University, Imphal.

8. Thapa, Arun Kumar. Sedimentological studies on Flysch sequences of parts of Ladakh. Jammu. Dr S K Shah.

Engineering

1. Halder, Subhasis. Analytical modelling and analysis of depletion mode devices. Delhi.

2. Jain, Vijender Kumar. Reliability considerations in distributed systems. Kurukhetra.

3. Mishra, Anurag. Irradiation of high temperature super-conductive YBa₂ Cu₃ O_{7-x} surfaces with Q-switched Nd:YAG pulsed laser. Delhi.

4. Mohammad, Yunis Ahmad Haj Hussain. Ergonomic design and evaluation of a new computer keyboard through measurement of physiological cost of operation under the influence of organismic factors. AMU. Dr S Aliul H Rizvi.

5. Said Younes. Studies in software reliability modelling. Delhi

6. Saroch, Vandana. Labeled graphs and matrices: Automaton to real. JNU. Prof K K Nambiar.

7. Shah, Syed Salahuddin. The behaviour of annular footings on sand. AMU.

Technology

1. Mishra, Kusum. Studies on energy recovery from pharmaceutical industrial wastewater using anaerobic packed bed reactor. Devi Ahilya. Dr J K Aggarwal, Department of Applied Chemistry and Dr T A Sihorwala, Department of Civil Engineering, Shri G S Institute of Technology and Science, Indore.

2. Singh, Binay Kumar. Comparative studies on sorption of toxic phenols on flyash and impregnated flyash. ISM. Prof N S Rawat.

EDUCATION NEWS INDEX

A list of select articles and editorials on education from newspapers received in the AIU Library during June 1995

EDUCATIONAL PHILOSOPHY

Ambirajan, S. Ethics education through ancient classics. *The Economic Times* 22.6.95.

EDUCATIONAL PSYCHOLOGY

Rao, N S. Why students fail? *Deccan Chronicle* 5.6.95.

Sushama, T N. Learning : A joyful experience. *The Hindustan Times* 6.6.95.

EDUCATIONAL SOCIOLOGY

Baxi, Pratiksha. Eve-teasing on campus. *The Pioneer* 28.6.95.

Budakoti, Devendra Kumar. Education a key factor in Uttarakhand. *Indian Express* 15.6.95.

DEFYING THE SC (Editorial). *Deccan Herald* 13.6.95.

RESERVATION ANOMALIES (Editorial). *The Hindu* 17.6.95.

THE DEMERIT of quotas (Editorial). *The Pioneer* 17.6.95.

EDUCATIONAL POLICY & PLANNING

Ahmed, M A. Reforms in school education. *Deccan chronicle* 7.6.95.

Amar Jit. Mid-day meal scheme isn't enough. *The Assam Tribune* 15.6.95.

Andhra Pradesh. Ramakrishna Rao Committee. For better school education. *Deccan Chronicle* 18.6.95.

_____. Reforming school education : An executive summary report. *Deccan Chronicle* 11.6.95.

Bangladesh. Ministry of Information. Food for education programme. *National Herald* 28.6.95.

EDUCATION AND social needs (Editorial). *The Hindu* 24.6.95.

Rao, K V. Teach me not. *The Telegraph* 20.6.95.

EDUCATIONAL ADMINISTRATION

Christo, G G. Alternatives to professional college admissions. *The Hindu* 20.6.95.

Desai, Armaity S. 'UGC will strictly look into the complaints of corruption'. *The Pioneer* 6.6.95.

Majumdar, Tapas. The logic of the Supreme Court's judgment on academic seniority cannot be denied : Easing peer pressures. *The Telegraph* 22.6.95.

Sanyal, Sunanda. Advising state - I : Higher education gone astray. *The Statesman* 16.6.95.

_____. Advising state - II : Raising educational standards. *The Statesman* 17.6.95.

Sharma, Aradhana and Ghosh, Deepshikha. The admission dice game. *The Statesman* 16.6.95.

Singh, J P. ICSE vs CBSE. *The Tribune* 5.6.95.

THE BANE of fake universities (Editorial). *The Hindu* 7.6.95.

Vedantam, Vatsala. Derecognise : To what end. *Deccan Herald* 10.6.95.

_____. Study scene. *Deccan Herald* 11.6.95.

Yashvanth Kumar, C B. Admissions test. *The Pioneer* 7.6.95.

EDUCATION & POLITICS

EDUCATING BIHAR (Editorial). *The Statesman* 17.6.95.

EDUCATION IN a mess (Editorial). *The Hindustan Times* 19.6.95.

Mishra, Sidharth. A blueprint for better education. *The Pioneer* 20.6.95.

TAMING THE academics (Editorial). *The Statesman* 12.6.95.

VISVA-BHARATI today (Editorial). *The Statesman* 3.6.95.

CURRICULUM

Agrawal, Damodar. Sex education in schools. *Deccan Herald* 18.6.95.

Atma Ram. Vocationalisation : Falling by the wayside. *The Hindustan Times* 27.6.95.

Biswas, Ranjita. Need for environment-based curriculum : Nurture through nature. *The Telegraph* 5.6.95.

Chakrabarty, Sampa. Sex education : Clarity begins at home. *The Telegraph* 30.6.95.

Chauhan, Aruna. US business schools change curriculum to suit Asian needs. **The Times of India** 28.6.95.

Rajput, J S. Curriculum should not be a burden. **The Hindustan Times** 6.6.95.

Thakur, B S. Teaching, communicating the concept of environment. **The Tribune** 5.6.95.

LANGUAGE & LANGUAGE POLICY

Munshi, Anju. Regional language in public schools marginalised : Dull textbooks fail to interest. **The Telegraph** 26.6.95.

Ray, Surja Sankar. Tongue in check. **The Telegraph** 13.6.95.

Sen, Ashok. Overcoming the languor. **The Telegraph** 13.6.95.

SCIENCE EDUCATION

Garg, J P. Whither laboratory education? **The Tribune** 19.6.95.

Jaswal, S S. Improving science practicals. **The Tribune** 19.6.95.

Mashelkar, Raghunath A. The goal is CSIR Inc'. **The Economic Times** 20.6.95.

Pal, Gobinda Ch. Science and basic learning. **The Hindu** 20.6.95.

VOCATIONAL EDUCATION

Baruah, Prabin. IIT and our students. **The Assam Tribune** 22.6.95.

DOEACC Society. Computer courses : DOEACC scheme. **The Times of India** 17.6.95.

Krishna Rao, C V. Role of medical universities. **The Hindu** 20.6.95.

Madhusudhan, P. CAD courses much sought-after. **Deccan Chronicle** 12.6.95.

Manpreet Singh. Management : A competitive career. **The Times of India** 22.6.95.

Mittal, L N. What is wrong with technical education? **The Tribune** 19.6.95.

Muthu, Sharika. Computer education fills a crucial gap. **The Times of India** 22.6.95.

Nanda, Antara. Business school graduates now opt for openings in finance. **The Times of India** 28.6.95.

Patil, V K. Agricultural education. **The Hindu** 20.6.95.

Sen Gupta, Nandini and others. Business on the learning curve. **The Economic Times** 18.6.95.

Shah, Kalpana and others. Banking on a cash-rich curriculum. **The Economic Times** 18.6.95.

Shukla, Rajiv. Three cheers for engineering hopefuls. **The Hindustan Times** 13.6.95.

SIGNS OF bad health (Editorial). **Indian Express** 12.6.95.

Srinivasa Rao, K. Need for re-orienting vocational courses. **Deccan Chronicle** 26.6.95.

Sutar, Gopal. Exploring new avenues. **Deccan Herald** 4.6.95.

Vasudev, Shefali. B Ed degrees : Not worth two in the bush. **The Hindustan Times** 20.6.95.

VOCATIONAL COURSES after class 10 (Editorial). **The Tribune** 19.6.95.

TEACHERS & TEACHING

Amrik Singh. Learning without teachers? **Deccan Herald** 4.6.95.

Kapoor, Aditi. Can't be a lecturer if stopped by NET. **The Times of India** 6.6.95.

Mulimani, V H. Making the instruction process effective. **The Hindu** 20.6.95.

Srivastava, Girish. A raw deal for teachers. **The Pioneer** 6.6.95.

COUNSELLING & GUIDANCE

Basu, Uday. Making the right choice. **The Statesman** 18.6.95.

Kapoor, Shishir and Sengupta, Parthasarathi. Counselling : The many options. **The Hindustan Times** 27.6.95.

Paul, Seema. Counsellors in Delhi schools help to iron out problems : Students learn to assess themselves. **The Telegraph** 12.6.95.

Rajni Reddy, O. On the right course. **Deccan Chronicle** 4.6.95.

Sanghania, Bhanu. The guiding force. **Deccan Chronicle** 4.6.95.

EDUCATIONAL TECHNOLOGY

Akki, Dinesh. Imparting hardware skills to school kids. **Deccan Chronicle** 5.6.95.

Geetanath, V. Education on the Idiot box. **Deccan Chronicle** 12.6.95.

Joshi, M G. Multimedia uses of optical CDs. **The Tribune** 15.6.95.

Mukul, Akshaya. Educating viewers. **The Pioneer** 6.6.95.

Rajaraman, Soundaram. Aiming for a high tech future. **Deccan Herald** 13.6.95.

Sehgal, Rashmi. Lacunae in edutainment. **The Telegraph** 19.6.95.

WORLD-WIDE imperatives in education (Editorial). **The Hindu** 5.6.95.

EDUCATIONAL EVALUATION

Atroley, Akansha. Alternatives to examination system. **National Herald** 25.6.95.

Iyer, T G L. New techniques in valuation. **Deccan Chronicle** 26.6.95.

Khare, Anshuman. Quality, timeliness and cost. **The Times of India** 26.6.95.

Parthasarathy, R. Examination reforms : A cry in wilderness. **The Hindu** 20.6.95.

Prabhu, Rajendra. Indian R&D centres : Coming out of their sloth. **National Herald** 22.6.95.

Prasad Rao, K V. Why study for inter? : Study for EAMCET! **Deccan Chronicle** 4.6.95.

ECONOMICS OF EDUCATION

Ambirajan, S. Check the educational divide. **The Hindu** 29.6.95.

Arunachalam, M. Employment for educated unemployed. **National Herald** 16.6.95.

Chandrakanth, R. Karnataka's gold mine. **The Hindu** 4.6.95.

Chirayil, Usha Rosanna. Indian MBAs are preferred. *The Times of India* 22.6.95.

Garg, Sarat Kumar. Privatisation : A quick-fix solution? *The Hindustan Times* 13.6.95.

Giri, Mehtab Nand Kumar. Higher studies and privatisation of institutions. *The Hindu* 27.6.95.

Hardwar Lal. Funding education. *The Hindustan Times* 13.6.95.

INVEST IN basic research (Editorial). *The Pioneer* 28.6.95.

Khullar, K K. A price tag on education. *The Hindustan Times* 13.6.95.

Ramabrahmam, I. Public policy and funding of varsities. *The Hindu* 13.6.95.

Surya, Vasantha. The real brain drain. *The Hindu* 11.6.95.

UNEMPLOYMENT ON rise (Editorial). *The Assam Tribune* 11.6.95.

LIBRARIES & BOOKS

Ahmed, Firoz Bakht. What ails Calcutta's great libraries? *National Herald* 4.6.95.

Balan, Sridhar. Has bookselling come of age? *The Hindu* 4.6.95.

Jussawalla, Adil. Why are we so casual about book reviews? *Deccan Herald* 25.6.95.

Mangla, P B. Making information a career. *The Tribune* 26.6.95.

Mishra, Sidharth and Sharma, Pankaj. Foreign information zone. *The Pioneer* 4.6.95.

Munshi, Anju. Shortage of textbooks a ritual every academic year : Students suffer in silence. *The Telegraph* 1.6.95.

Raman, Anuradha. Perfect for a leisurely browse. *The Pioneer* 10.6.95.

Vyas, Ravi. Bookwise : Studied strategy. *The Telegraph* 9.6.95.

WOMEN'S STUDIES

Bahl, Taru. Why girls score over boys. *The Pioneer* 20.6.95.

ADULT EDUCATION

Bahuguna, Nitin Jugran. Hope for the hopeless. *The Hindustan Times* 4.6.95.

Khullar, K K. Educating adults is not easy. *The Pioneer* 20.6.95.

ELEMENTARY & SECONDARY EDUCATION

Agrawal, Seema. Away at school. *The Times of India* 3.6.95.

Ahmed, Tabassum. Education : Back to the dark ages. *The Hindustan Times* 26.6.95.

Boseley, Sarah. Value added by teachers. *The Hindustan Times* 6.6.95.

Chadha, Sushma. Nursery is a woman's domain. *The Pioneer* 14.6.95.

Geetanath, V and Subrahmanyam, G S. When parents find holes in their pockets. *Deccan Chronicle* 4.6.95.

IMPARTING VIGOUR to primary education (Editorial). *The Hindu* 17.6.95.

Sinha, L S. Education : Lightening the satchel. *The Hindu* 13.6.95.

Surya, Vasantha. The lure of the English medium. *The Hindu* 4.6.95.

COMPARATIVE EDUCATION & AREA STUDIES

Mahender Reddy, J. What ails our universities? *Deccan Chronicle* 25.6.95.

Narayanan, Jai S. Higher education in the confines of the home. *The Times of India* 7.6.95.

OXBRIDGE DEGREE (Editorial). *The Times of India* 20.6.95.

Roberts, Patricia. Making Bhutan's schools more relevant. *The Hindustan Times* 4.6.95.

Villanilam, J V. Higher learning : A case study. *The Hindu* 6.6.95.

INSTITUTIONAL PROFILE

Moses, K. Training manpower for better medicare : International School of Medical Imaging Technology. *Deccan Chronicle* 26.6.95.

BIOGRAPHICAL PROFILE

Ahuja, Ajay. A forgotten philosopher : J Krishnamurti. *The Hindustan Times* 18.6.95.

RABINDRANATH TAGORE (Editorial). *Deccan Chronicle* 29.6.95.

MADURAI KAMARAJ UNIVERSITY

NOTIFICATION NO. R/11/95

Applications in Eight copies on plain paper are invited for the post of DEAN with full particulars in the Proforma given below and copies of testimonials and such other additional information as the applicants may wish to give.

Qualifications :

The applicant should possess high academic qualifications and administrative experience, preferably as Principal in an affiliated or constituent college for atleast five years.

Scale of Pay : Rs. 4500-150-5700-200-7300

Age : Not beyond 62 years as on 1-8-95.

The appointment will be on tenure basis for a period of 3 years in the first instance.

PROFORMA :

1. Name of the applicant :
2. Address : (to which communication may be sent) :
3. Age & date of birth :
4. Community (FC/BC/MBC/DNC/SC/ST) :
5. Present position :
6. Academic Qualifications (with dates on which degrees were taken)
7. Experience :
 - a. Teaching - PG Level :
- UG Level :
 - b. Research :
(with publications, if any)
 - c. Administrative Experience :
8. Distinctions/Honours :
9. Membership in professional academic or scientific bodies :
10. Any other information :
11. Two References (with names & address) :
12. Testimonials :
13. Signature of the applicant :

The applications with full particulars may be sent in a sealed cover to Thiru C Chandrasekaran, Registrar-in-charge, Madurai Kamaraj University, Madurai - 625 021 on or before 25-7-95 by Registered Post.

Madurai-625021

Date: 3-7-95

REGISTRAR-IN-CHARGE

INDIAN SCHOOL OF MINES

DHANBAD 826004

No. 10915/RG/95

July 4, 1995

ADVERTISEMENT FOR THE POST OF REGISTRAR

Name of Post : Registrar
Scale of Pay : Rs. 4500-150-5700-200-7300
Nature of Post : Tenure of 5 years - extendable for another term not exceeding 5 years.
Age : About 50 years
Last date for receiving application : Within 45 days from the date of publication of the advertisement.

Indian School of Mines, Dhanbad, an autonomous Institution with the status of Deemed University, is a premier institution training manpower for the mining, petroleum and mineral industries awarding degrees in the disciplines of mining, petroleum, fuel, and mineral engineering & mining machinery, industrial engg & management, environmental sciences and engineering, applied geology, geophysics, chemistry, physics, mathematics, computer science, electronics & instrumentation and humanities. The School has a strong Executive Development Centre which runs in-campus and off-campus courses and has a standing of repute.

The post of Registrar demands a multi-competence and qualifications including academic, administrative, financial matters and knowledge of the general rules relating to Govt and UGC procedures in educational matters.

He shall be directly responsible to the Director to effectively and expeditiously implement the decisions of the Executive Board of which he is the Secretary. He is required to maintain good human relations with students, faculty and other members of the community, and should be capable of developing a good academic life in the institute and on the campus.

The appointment of Registrar will be made on contract basis with a tenure of five years which is extendable for another term not exceeding five years. The candidate should preferably be in the age group of around 50 years. The other terms and conditions of appointment of Registrar are governed by the relevant bye-laws, rules and regulations of the School.

The post carries a pay-scale of Rs. 4500-7300 plus allowances, medical, LTC benefits and GPF-cum-Gratuity-cum-Pensionary benefits as are applicable to Indian School of Mines as a deemed university. The School will also provide a suitable accommodation on rental basis as per rules in its campus appropriate to the post of Registrar as per scale laid down.

Qualifications & Experience :

Essential: A postgraduate degree with at least 55% marks or its equivalent grade.

At least 15 years in an university of repute or in an Engineering/Technological/Research Institution, of which at least 10 years should be in a senior administrative/teaching capacity and not less than 8 years as Asstt Professor/Reader/Deputy Registrar or equivalent position not below the pay scale of Rs. 3700-5700. Interested Professor and persons otherwise well qualified and experienced to meet the requirements of post may also apply.

Desirable: a) A degree in law or qualifications in accountancy as a Chartered Accountant or as a Company Secretary.

b) Experience in curricula development/examination reforms/higher educational technologies.

The School reserves the right to relax the above conditions of qualification and experience in case if otherwise exceptionally good candidates are available. It may also consider candidates on contract basis referred by experts.

Application on plain paper with full particulars of date of birth, educational qualifications and experience with reference to the needs of the post should be sent to the Director, Indian School of Mines, Dhanbad in a confidential envelope marked "Application for the post of Registrar" within 45 days of the publication of this advertisement. Candidates who are employed should send their application through proper channel. Incomplete application shall be rejected.

B.L. Jha
REGISTRAR (Actg)

CLASSIFIED ADVERTISEMENTS

JAI NARAIN VYAS UNIVERSITY, JODHPUR (Establishment Branch)

No. JNVU/Estt/NT/95/

Advertisement No. 41/95-96

Applications are invited for the following posts on time contract basis under E.M.R.C. Project sanctioned by the U.G.C. on the prescribed form obtainable from the office of the Registrar, Jai Narain Vyas University, Jodhpur on payment of Rs. 10/- (Rs. 2.50 for SC/ST applicants) either in cash or through crossed Indian Postal Order payable to Registrar, Jai Narain Vyas University, Jodhpur alongwith a self-addressed envelope of 27x12 cms size affixing postal stamps of Rs. 8/-. The last date for receipt of completed application forms is **31.08.1995 (THURSDAY) upto 5.00 pm**. The envelope should be superscribed "Application for the post _____ (name of the post).

Name of the Post	No. of Posts	Scale of Post
Producer	1 (Adhoc)	2200-75-2800-100-4000
Scientific Officer (Computer)	1	2200-75-2800-100-4000
Production Assistant	1	1640-60-2600-75-2900
Additional Cameraman	1	1640-60-2600-75-2900
Graphic Artist	1	1640-60-2600-75-2900

Details of qualifications alongwith General Conditions, etc. will be supplied to the candidates alongwith application forms.

The University reserves the right to increase or decrease the number of posts or not to fill up any post if deemed necessary.

16% and 12% posts are reserved for SC/ST category.

BANASTHALI VIDYAPITH (Deemed to be University) National Institution for Women's Education

CHIEF WARDEN

Banasthali Vidyapith is a fully residential institution for education of Women from nursery upto Post-graduate level. It has about 2000 students in its various hostels.

The Vidyapith aims at the allround development of student's personality which will reflect a synthesis of spiritual values and scientific achievements of the East and the West. The Vidyapith has a rich educational programme encompassing wide spectrum from classical areas in humanities to new emerging areas in Science and Technology. But the foremost emphasis is value development and in this Hostel has to play a major role.

The institution is looking for a Chief Warden who will be one of the key persons in its set-up.

The person should be above 45 years

and should have a Ph.D. with at least 20 years experience of teaching in a Women's institution of higher education. She should be willing to devote 24 hrs 365 days to the cause of the Vidyapith and must be in agreement with the aims, objectives and value system of the institution.

The pay scale will be normally that of a professor (4500-7300). PF, Gratuity, Insurance, Family Pension etc. will be admissible as per rules and free residential accommodation will be provided.

D.P. Ojha
REGISTRAR

Bio-data giving complete details about academic career, experience etc. should be sent to the Director, Banasthali Vidyapith, P.O. Banasthali Vidyapith (Raj.) 304022 in a cover marked "confidential" by **24th July 1995**. Educationists and other eminent citizens may also recommend names of suitable person(s).

No. 4/95.

ST. XAVIER'S COLLEGE - GOA

Applications are invited for the following posts:-

1. Lecturer in Commerce- 1 full time and 1 part time (Specialization in Financial Accounting)
2. Lecturer in Botany - 1 full time

ELIGIBILITY:

- (1) Master's degree in the relevant subjects with atleast 55% marks or its equivalent grade and good academic record (i.e. atleast 50% at the graduation examination or an average of 50% marks at the three examination in SSC, HSSC and graduation taken together)

SCALE OF PAY:

Rs. 2200-75-2800-100-4000 and other admissible allowances.

Persons who are already employed shall send their applications through proper channel.

Certified copies of statements of marks at all public examinations should be enclosed.

Applications with relevant details should reach the Principal, St. Xavier's College, Mapusa, Goa, 403 507 **within 15 days** from the date of publication of this advertisement.

Fr. Antimo Gomes
PRINCIPAL

INDIAN COUNCIL OF MEDICAL RESEARCH

ANSARI NAGAR, NEW DELHI-110 029.

I.C.M.R. AWARDS - 1994

Indian Council of Medical Research, New Delhi **extends the date upto 31st July, 1995** for submission of nominations/applications from Indian Scientists for its various prizes and awards in the field of Biomedical Sciences. Application forms and other relevant information about the prizes can be obtained from the **Director- General, Indian Council of Medical Research (INDO-FOREIGN CELL), Ansari Nagar, New Delhi-110 029.**

**THE UNIVERSITY OF
BURDWAN
RAJBATI : BURDWAN
WEST BENGAL**

**Advertisement No. 1/95-96
Dated, 28th June, 1995**

Applications in the prescribed form are invited for the following teaching posts in the UGC scale of pay plus Dearness Allowance and other admissible allowances and pensionary benefits according to the rules of the University :- (A) Reader in English - Two posts (B) Lecturer in English - One post. **MINIMUM QUALIFICATIONS** : As prescribed by the University Grants Commission. **SPECIALISATION OR PROFICIENCY** : For (A) First post - ELT/Applied Linguistics, Second post - Commonwealth Literature. For (B) Chaucer-Spenser Philology (Group-B). For the second post of Reader in English applications received in response to Advertisement No. 4/93-94 dated 10.9.93 may also be considered. Prescribed application forms along with the particulars of the UGC's prescribed qualifications may be obtained from Rajbati Office personally on payment of Rs. 20/- in cash at the University Sales Counter from 11 a.m. to 1.30 p.m. on working days (except 2nd and 4th Saturdays) or by sending a self-addressed stamped (Rs. 2/-) envelope (11"x9") accompanied by crossed IPO of Rs. 20/- drawn in favour of the Finance Officer, University of Burdwan. Last date for submission of applications to the Registrar, University of Burdwan with the requisite fee of Rs. 25/- payable in the manner indicated above is 31st July, 1995.

**Dr. M.K. Chatterjee
REGISTRAR**

**GAUHATI UNIVERSITY
GUWAHATI-781 014
Advertisement No. T/95/1**

CORRIGENDUM

Read Advertisement No. T/95/1 as stated below.

24. Lecturer in Physics - 4 Posts - (I) Nuclear Physics. M.Sc. in physics with Nuclear Physics/Theoretical Nuclear Physics, candidates working in Nuclear Structure, Nuclear reaction or development of Nuclear detectors will be preferred.

**THAPAR INSTITUTE OF ENGINEERING & TECHNOLOGY
PATIALA**

ADV NO. PAS/5/95

Applications on prescribed form (obtainable free from the office of the Registrar by sending a self addressed stamped envelope for Rs. 3/- of 9" x 4" size) are invited so as to reach the office of the undersigned by July 28, 1995 for the following posts :-

***A. USIC (UNIVERSITY SCIENCE INSTRUMENTATION CENTRE (U.G.C))**

- | | | |
|-----|---|--|
| +1 | TECHNICAL OFFICER-III/PROFESSOR : | ONE |
| | Pay Scale : Rs. 4500-150-5700-200-7300 | |
| +2. | TECHNICAL OFFICER-II/ASSISTANT PROFESSOR : | ONE |
| | Pay Scale : Rs. 3700-125-4950-150-5700 | |
| | Specialization | Instrumentation or Allied Field |
| | (for 1 & 2 above) | (Electronics/ Electrical/ Mechanical Optical). |

B. CIVIL ENGINEERING DEPARTMENT (REGULAR)

- | | | |
|-----|--|---|
| +3. | LECTURER : | ONE |
| | Pay Scale : Rs. 2200-75-2800-100-4000 | |
| | Specialization | Transportation Engg./Surveying/
Building Science/ Structural Engg. |

***C. COMPUTER SCIENCE & ENGINEERING DEPARTMENT (WORLD BANK)**

- | | | |
|----|---------------------------------------|-------------------|
| +4 | LECTURER : | THREE NOS. |
| | Pay : Rs. 5250/- Consolidated) | |
| | Specialization | Hardware/Software |

D. COMPUTER CENTRE

- | | | |
|---|--|---|
| 5 | SYSTEM ANALYST-CUM-PROGRAMMER : | ONE |
| | (Against Leave Vacancy for two years) | |
| | Pay Scale : Rs. 2200-75-2800-100-4000 | |
| | Qualification | Master of Computer Applications
or M.E./P.G. Diploma in Computer
Science OR B.E. Or M.Sc./Physics/
Mathematics/Statistics/Operational
Research with two years experience. |

***E. ELECTRICAL & ELECTRONICS ENGINEERING DEPARTMENT (WORLD BANK)**

- | | | |
|----|--|--|
| +6 | LECTURER : | ONE |
| | Pay : Rs. 5250/- (Consolidated) | |
| 7. | LABORATORY SUPERINTENDENT : | ONE |
| | Pay : Rs. 3500/- (Consolidated) | |
| | Qualification | Matriculation +ITI + 14 years experience OR Diploma (Three Years) +
10 years experience OR B.Sc. +
10 years experience OR M.Sc. +
4 years experience. |

* The posts at A, C & E are temporary against project.

+ The Qualifications & experience for posts at 1,2,3,4 & 6 are as approved by the Government (Department of Technical Education/ All India Council for Technical Education).

Detailed information giving prescribed qualifications and reservation of posts shall be available in the information sheet attached with the application form.

REGISTRAR

(II) **Solid State Physics**, M.Sc. in Physics with solid state Physics as Special paper. Candidates having Theoretical Solid State Physics as special paper may be preferred.

(III) **Spectroscopy**, M.Sc. in Physics with Spectroscopy as special paper, candidates with research experience in laser spectroscopy may be preferred.

(IV) M.Sc. in Physics with Radio Physics/Electronics as special paper.

(Temporary against leave vacancy).

40. Lecture in Business Administration - 1 Post - Specialisation - Open. Preference will be given to candidates having MBA with Financial Management.

42. Reader in English - 1 Post - Specialisation - Open.

**K.C. Deka
REGISTRAR**



POSTGRADUATE INSTITUTE OF MEDICAL EDUCATION & RESEARCH, CHANDIGARH

ADMISSION NOTICE NO. 40/95 (ACAD)

Applications, on prescribed form, are invited for the following para medical courses starting from first September, 1995:-

Sr. No.	Name of the course	Total Seats	Seats reserved for Sch. Castes/Tribes	Stipend admissible
1.	B.Sc. Medical Technology (Laboratory)	15	4	Rs. 150/- p.m. for 1st year and Rs. 200/-p.m. for 2nd & 3rd years
2.	B.Sc. Medical Technology (X-Ray)	10	2	-do-
3.	B.Sc. (Audiology & Speech Therapy)	6	2	-do-
4.	B.Sc. Medical Technology (Radio-Therapy)	5	-	No stipend admissible
The duration of the above courses is three academic years				
5.	B.Sc. Physical Therapies (B Ph.T.)	10	2	Rs. 150/- p.m. for 1st year and Rs. 200/- p.m. for 2nd, 3rd & 4th year.
The duration of the course is four and half academic years				
6.	Operation Theatre Assistant	10	2	Rs. 150/- p.m.
The duration of the course is one academic years				

- The number of seats mentioned above is subject to variation without prior notice.
- Age limits - Not more than 25 years and less than 17 years on 1st September, 1995 (i.e. those born after 1st September, 1978 and before 1st September, 1970 are not eligible.)
- A few sponsored/deputed candidates may also be accepted for courses at Sr. Nos. 1, 2, 3, 5 & 6. Admission to course at Sr. No. 4 is restricted to deputed/sponsored candidates only. No upper age limit for the deputed/sponsored candidates
- Selection will be held at Chandigarh during last week of August, 1995 for which candidates will appear for entrance test/interview at their own expense
- For courses at Sr. Nos. 1 to 3 and 5 candidates are required to submit only ONE application. Choice of courses be mentioned in appropriate space on the application form. Separate applications are required for other two courses. Before indicating the choice of the courses candidates must ensure that they are eligible to apply for the same in accordance with the qualifications and other terms and conditions prescribed for the purpose.

ADMISSION QUALIFICATIONS

FOR THE COURSES AT SERIAL NOS. 1 & 2

10+2 passed in Science Group or its equivalent qualifications from a recognised Board/University

OR

10+2 (Vocational passed in the respective stream i.e. Medical Laboratory Technology for (Course No. 1) and X. Ray (for Course No. 2)

OR

- Matriculation/Higher Secondary/Pre-University or its equivalent qualification passed from a recognised Board/University with Physics and Chemistry.
- Certificate/Diploma in the concerned subject i.e. Laboratory Technology (for course No. 1) and X. Ray Technician (for course No. 2) of atleast one year duration from a recognised institute.
- 5 years experience as Laboratory Assistant/Technician (for course No. 1) and as Radiographer (for course No. 2) in a teaching/research institute after obtaining the qualification at (a) and (b) above.

FOR COURSE NO. 3

10+2 passed in Science group from a recognised Board/University or its equivalent qualification with atleast 50% marks.

FOR COURSE NO. 4

10+2 passed in Science group or its equivalent qualification from a recognised Board/University with Physics and Chemistry.

OR

- Matriculation/Higher Secondary/Pre-University passed from a recognised Board/University with Physics and Chemistry.
- Certificate/Diploma in Radio-graphy from a recognised instt. of atleast one year duration.
- 5 years experience as a technologist attached to Radio-therapy division/department of a recognised teaching/research instt. after obtaining the qualifications at (a) and (b) above.

FOR COURSE NO. 5

10+2 passed in Science Medical Group or its equivalent passed with Physics, Chemistry, Biology and English from a recognised Board/University/Councils.

FOR COURSE NO. 6

Matriculation/Higher Secondary/Pre-University passed or its equivalent qualification in the First Division with Physics and Chemistry from a recognised Board for general candidates. Scheduled Castes/Tribes and sponsored/deputed candidates with atleast second division in Matriculation/Higher Secondary examination with Physics and Chemistry from recognised Board will be eligible.

Application form and detailed information are available from office of the undersigned either in person on payment of Rs. 100/- at the counter from 10.30 AM to 11.30 AM on all working days and 2.30 PM to 3.30 PM on all working days (except Saturdays) or by post on written request accompanied with a self addressed envelope of 23 cms x 10 cms with postage stamps of Rs. 7/- affixed thereon and a crossed postal order for Rs. 100/- drawn in favour of the Director of the Institute.

NOTE: No request for supply of form by post will be entertained after 25.7.1995

**CLOSING DATE FOR THE RECEIPT OF APPLICATIONS IS
31ST JULY, 1995**

**M.L. Ranga
REGISTRAR**



ANDHRA PRADESH AGRICULTURAL UNIVERSITY
ADMINISTRATIVE OFFICE : RAJENDRANAGAR : HYDERABAD-500 030

ADMISSION NOTIFICATION - 1995-96

Applications are invited for admission to the following Degree Courses for the academic year 1995-96.

GROUP I

- i. B.V.Sc & AH
- ii. B.Sc (Agriculture)
- iii. B.Sc (Horticulture)
- iv. Bachelor of Fishery Science
- v. B.H.Sc. (Rural)

GROUP II

- i. B.Tech (Agricultural Engineering)
- ii. B.Tech (Dairying)

Separate applications are prescribed for courses under each group.

THE CRITERION FOR SELECTION TO THE COURSES MENTIONED ABOVE IS THE RANK OBTAINED AT THE ENGINEERING, AGRICULTURAL AND MEDICAL COMMON ENTRANCE TEST 1995 (EAMCET-95), CONDUCTED BY THE CONVENOR, EAMCET-95, JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY, MASAB TANK, HYDERABAD ON 30-5-95 AND A PASS IN THE INTERMEDIATE EXAMINATION OR ITS EQUIVALENT. FURTHER DETAILS CAN BE HAD FROM THE PROSPECTUS.

Application together with prospectus can be had from the Principals of 1) Agricultural College, Bapatla, Guntur District - 522 101 2) Agricultural College, Naira, Camp Office: Agricultural Research Station, Amadalavalasa, Srikakulam Dist - 532 185 3) College of Veterinary Science, Tirupati, Chittoor District - 517 502 4) Agricultural College, Rajendranagar, Hyderabad-500 030 5) College of Home Science, Saifabad, Hyderabad - 500 004 6) Agricultural College, Aswaraopet, Khammam District-507 301 7) Agricultural College, Nandyal, Kurnool District 513 503 8) College of Fishery Science, Muthukur Road, Nellore-524 004 and at the University's Agricultural Research Stations at Warangal - 506 007 and Anakapalli (Visakhapatnam District - 531 001.

Sale of application forms will commence from 5-7-95 on payment of Rs. 30/- (Rupees Thirty only) in person. Those who wish to obtain application form by post should send a crossed D.D. for Rs. 30/- (Rupees thirty only) towards the cost of application form drawn from any Branch of Andhra Bank or State Bank of Hyderabad in favour of the Comptroller, A.P. Agricultural University, Hyderabad - 500 030 alongwith self addressed envelope (12" x 5") duly affixing postal stamps worth Rs. 5/-. **No postal order will be accepted.**

INFORMATION AS TO WHETHER THEY DESIRE TO APPLY FOR COURSES UNDER GROUP I OR UNDER GROUP II MUST BE CLEARLY GIVEN IN THE REQUISITION LETTERS.

Requisition for supply of admission forms by post after 21-7-95 will not be accepted.

Applications duly filled in should reach the Office of the Registrar, Andhra Pradesh Agricultural University, Administrative Office, Rajendranagar, Hyderabad - 500 030, on or before 5-8-95. Applications received after 5-8-95 will be summarily rejected.

HYDERABAD

DATED: 24-6-1995

T. Sathyanarayana Reddy

REGISTRAR